COTTON

MARCH, SERVING THE 1939

Textile Industries

It's swell to be back on the job, Ed, and know that our Group Welfare Plan will pay my doctor bills! I'd be sunk without that.

Good to have you back, Jim. The Big Boss sure knew the answers when he made it possible for us to have the Provident Group Welfare Plan in the mill.

Could Your Employees Say This About Your Mill?

STAGGERING bills from sickness or accident can destroy the financial future of employees in the twinkling of an eye.

That's why more and more textile firms are adopting the dependable, time-tested Provident Group Welfare Plan that pays those bills for your Employees.

LET us bring to bear upon your welfare problem the experience gained through more than a half-century. There is no obligation involved.

Such a Provident Group Welfare Plan can help solve financial burdens of employees—without cost to employers—by meeting the extra expenses caused by—

- Death in family
- Loss of time due to accident or sickness
- Hospitalization or operation when necessary
- Aiding dependents upon death of employee

PROVIDENT
LIFE AND ACCIDENT
INSURANCE COMPANY
CHATTANOOGA, TENNESSEE

• Specialists in Group Welfare Protection Plans for Over a Half Century •

"I'm no Deep-Sea Diver..."

...says this

DYE BEAM

Because Monel is tough and strong, and resists corrosion by alkalies and dye liquors as well as by salt solutions, it ensures highly satisfactory performance with maximum economy.

"Yet every day of my life I'm put to work in a briny mixture!"

"The boss says salt drives color from dye into fabric. So they dump *plenty* of NaCl in the tank I work in. That's swell for the goods . . . but how about me? It's lucky I'm made of Monel!

"I often think of the dye beam that had this job before me. What salt did to him was nobody's business. He was supposed to be made of corrosion-resistant metal. At first he seemed O. K. Then trouble developed. Corrosion began to appear. As time went on still more showed up. And all the time it got worse. And that dye beam got weaker.

"What a state the boss was in. First he blamed the dye liquor. Then the alkalies we used. Finally, he tumbled to the cause: The salt they'd put in the dye. But what could he do?

"*Now* . . . everything's hunky-dory. I *can't* rust . . . I'm made of Monel. The boys find cleaning a cinch. And they don't need to treat *me* gentle. They think I'm just the berries. And the boss says I'll *never wear out!*"

• • •

Troubled by rust and salt-corrosion pitting? Then change to Monel equipment. You'll avoid lots of trouble, and also cut costs . . . by saving on time, on labor, on repairs and on replacements. Write for further information on Monel.

"Monel" is a registered trade-mark of The International Nickel Company, Inc., which is applied to a nickel alloy containing approximately two-thirds nickel and one-third copper.

INCO MONEL

MONEL

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL ST., NEW YORK, N.Y.

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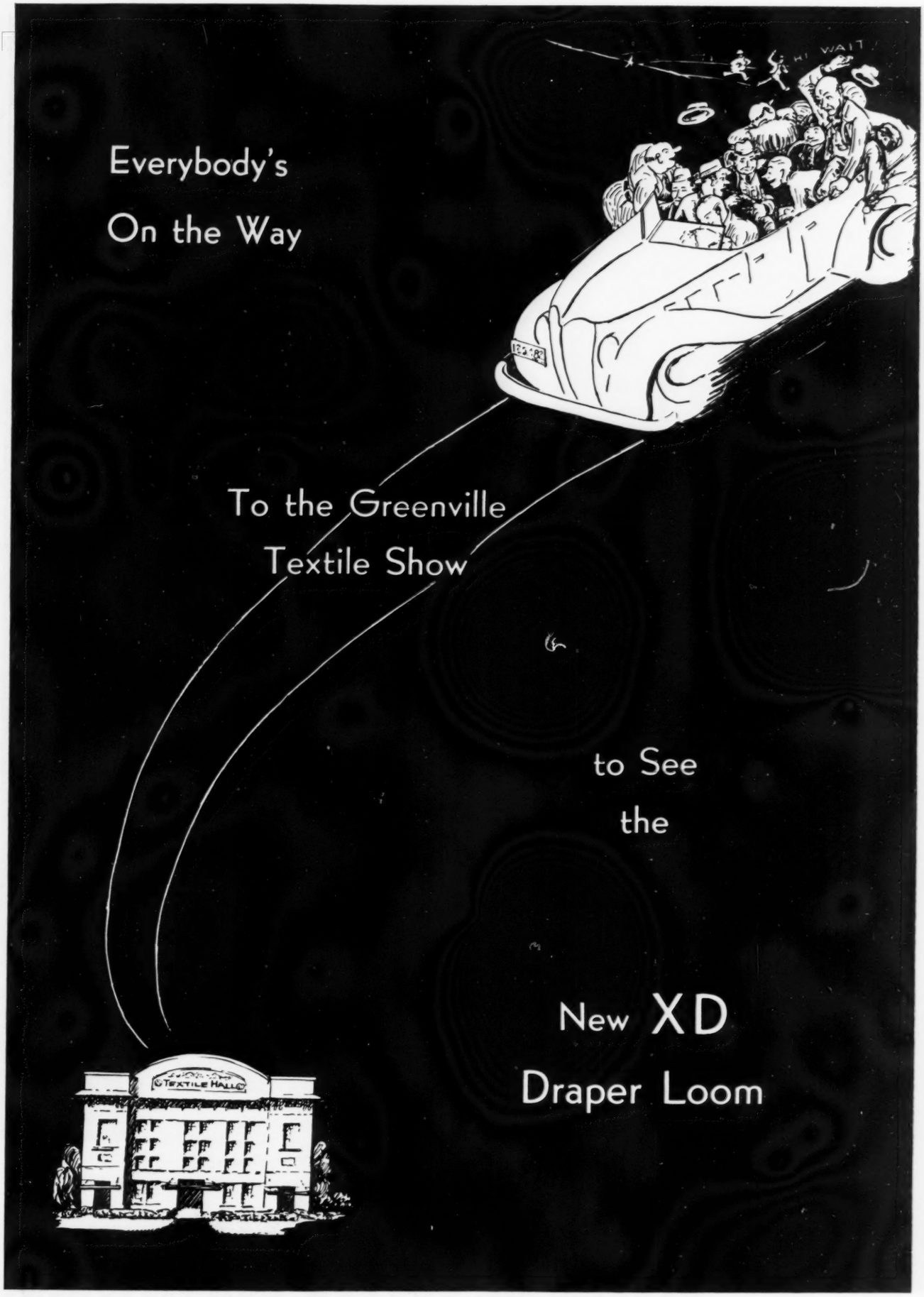

Everybody's
On the Way
HI WAIT
To the Greenville
Textile Show
to See
the
New XD
Draper Loom
TEXTILE HALL

CLEAN AIR
TO BREATHE
Promotes Health
That's the humanitarian side of the Texspray System of Cotton Conditioning.
Texspray clears the air of 70% of the fly in the card-room alone. It also brings the static nuisance under control and produces yarn easier to work, from cards to looms or knitting machines.
The Texspray System is available only to mills located in cotton manufacturing centers of the United States. If you are so located, you are invited to write:
The Texas Company, 135 East 42nd Street, New York City.
TEXACO
REG. U.S. PAT. OFF.

TEXACO Texspray

SYSTEM OF COTTON CONDITIONING

GET THE UNDIVIDED RESPONSIBILITY THAT MEANS LOWER OPERATING COSTS!

It's Worth Dollars to You to Have One Manufacturer Responsible for Your Motors, Controls, and Drives! Learn the Allis-Chalmers Story of Big Savings and Better Performance!

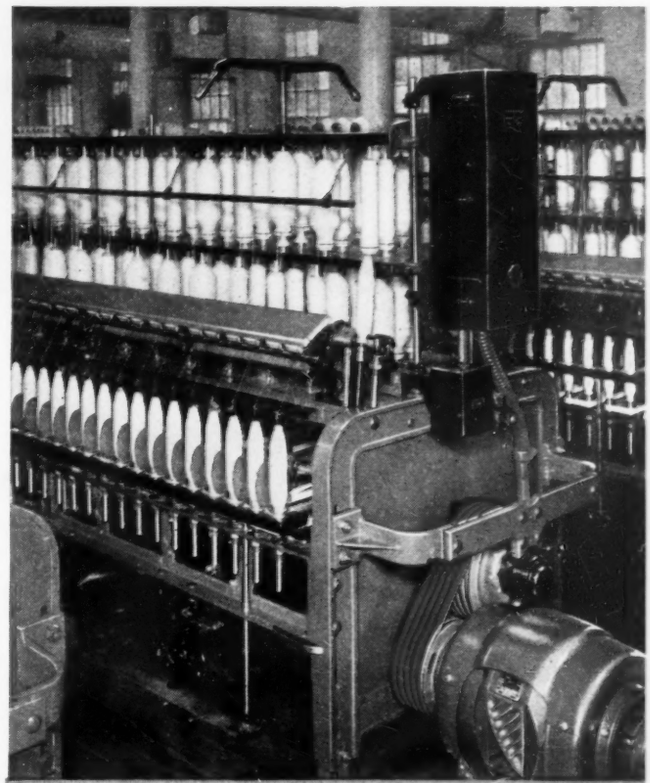
Mill owners who are now using Allis-Chalmers Motors, Allis-Chalmers Controls, and Allis-Chalmers Texrope Drives will tell you why it pays to get this Undivided Responsibility!

The motors are the famous Quick-Clean Motors — designed to beat lint-laden air conditions in the textile plants . . . tailor-made for the industry!

The drives are the original Texrope V-belt drives originated and developed for dependable, money-saving power transmission in textile mills!

Also available is the well-known line of Allis-Chalmers cost-cutting Control Equipment, especially equipped and constructed for Textile mill use.

Add them together and you get an unbeatable combination . . . with a single, undivided responsibility for giving you continuous operation . . . lower service costs . . . greater profits! There is no passing the buck when you specify the Allis-Chalmers complete service!



ALLIS-CHALMERS QUICK-CLEAN MOTORS . . . Allis-Chalmers Control Equipment . . . Vari-Pitch Texrope Drives give undivided responsibility for power application that brings increased profits in this southern textile mill.

It Pays to Depend on Allis-Chalmers!

Allis-Chalmers responsibility is *your insurance* against power failure . . . plant shutdowns . . . loss of production! Make use of Allis-Chalmers pioneering leadership and experience in the textile field. Follow the lead of prominent mill owners who have learned it pays to depend on Allis-Chalmers!

For full details on Quick-Clean Motors, Allis-Chalmers Control Equipment, and Texrope Drives and Sheaves . . . call the nearest district office, or write to Allis-Chalmers direct. An engineer, trained in textile problems, will be glad to show you how you can keep your production steady . . . reduce your operating and maintenance costs . . . increase your profits — with Allis-Chalmers service and undivided responsibility!

1060

PRODUCTS ENGINEERED TO PAY FOR THEMSELVES

Electrical Equipment • Power Transmission Equipment • Steam and Hydraulic Turbines • Blowers and Compressors • Engines and Condensers • Centrifugal Pumps • Flour and Cereal Mill Equipment • Boiler Feedwater Treatment • Saw Mill and Timber Preserving Machinery • Crushing, Cement, and Mining Machinery • Power Farming Machinery • Industrial Tractors and Road Machinery

ALLIS-CHALMERS

MILWAUKEE · WISCONSIN

BRIEFER AND MERRIER—
BUT A BIGGER DYEING PROBLEM

Calco's Technical Service Means Skilled Help for the Asking

As bathing suits grow briefer, they become merrier in the variety of their design, gayer in coloring. And this means a bigger problem for dyers and finishers. For fastness to sunlight and sea water are more of a "must" than ever before.

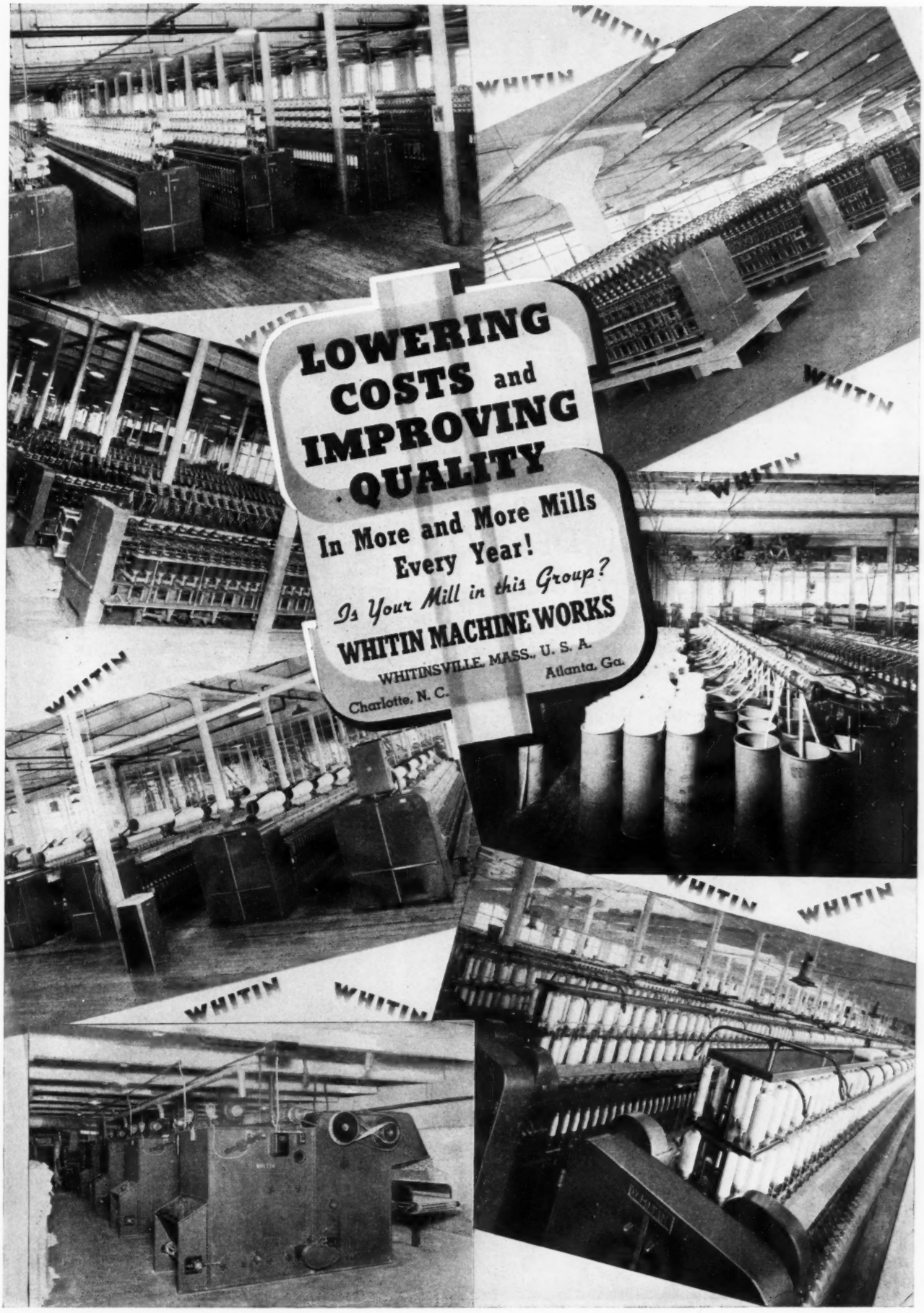
The experience of many seasons has proved that Calco colors can put an end to guesswork and uncertainty in finishing bathing suit fabrics, of wool, cotton, silk or synthetic fibres. Our range of shades and types of dyes is wide. Our Technical Service Division has the kind of practical background that makes them a real help in the dye house. Whether or not you now use Calco products, their services are yours for the asking—to help with difficult matching problems or to help make your production run more smoothly and more profitably. Simply write or wire our main office or nearest branch office, and one of our Technical Service Men will be sent to work with you without cost or obligation.

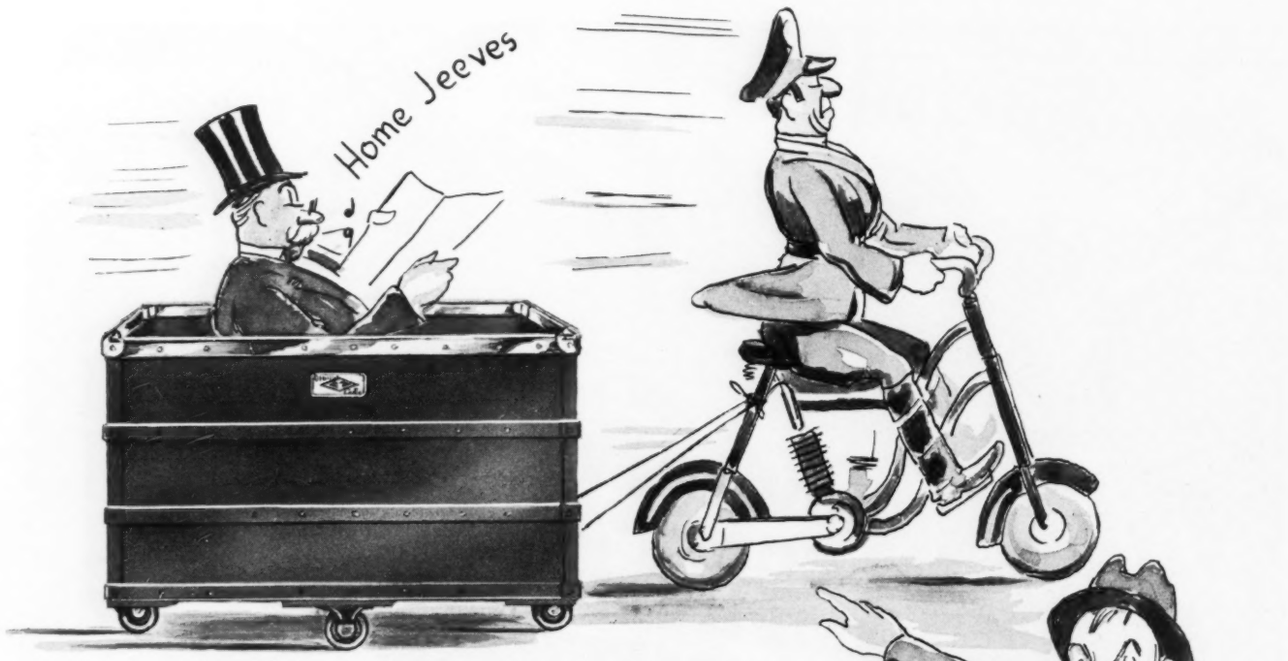
For Color in Textiles it's

Calco

THE CALCO CHEMICAL COMPANY, INC.
BOUND BROOK NEW JERSEY

A Division of American Cyanamid Co. • Boston • Philadelphia
Providence • New York • Charlotte • Chicago • Paterson


LOWERING COSTS and IMPROVING QUALITY
In More and More Mills Every Year!
Is Your Mill in this Group?
WHITIN MACHINE WORKS
WHITINSVILLE, MASS., U. S. A.
Charlotte, N. C.
Atlanta, Ga.
WHITIN



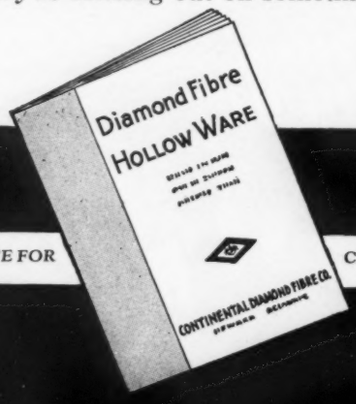
"Big Boss sold his car when he saw how slick those new DIAMOND FIBRE TRUCKS performed"

Yeh, Ingleby (that's the boss) figured he oughta be getting some personal enjoyment outa that fleet of new Diamond Fibre Trucks he'd seen performing so swell at the plant.

No reason, he says, why those tough, rubber-tired, roller-bearing casters shouldn't give ***him*** as smooth a ride as the whopping loads of materials they handle in the mill room.

An' boy, you shoulda heard him ravin' about the way those pet trucks of his stand up under punishment! He says it'd really be a job to tear one of 'em up, what with those tough, light Diamond Fibre bodies and the way they're reinforced with hardwood bands and rust-resisting metal corners.

Yessir, from what Ingleby says, I guess pretty near all big plant bosses use Diamond Fibre Trucks. If they don't, they're missing out on somethin' good!



WRITE FOR CATALOG HW9

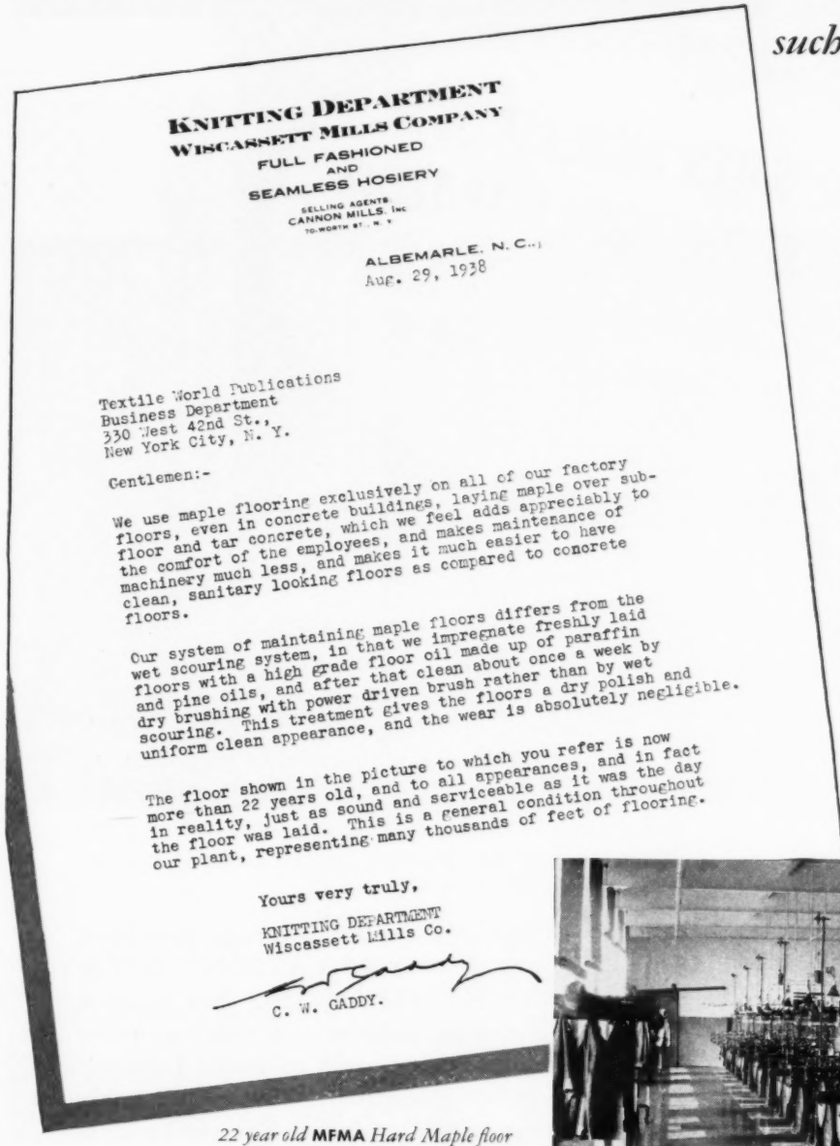
Continental Diamond Fibre Company

Newark, Delaware

SALES OFFICES IN PRINCIPAL CITIES

"The flooring in our plant is of *Northern Hard Maple* *such as is sold by the* MFMA*"

says C. W. GADDY, Supt. and Mgr., Knitting Department, Wiscassett Mills Company



KNITTING DEPARTMENT
WISCASSETT MILLS COMPANY
FULL FASHIONED
AND
SEAMLESS HOSIERY
SELLING AGENTS
CANNON MILLS, INC
70 WORTH ST., N. Y.

ALBEMARLE, N. C.,
Aug. 29, 1938

Textile World Publications
Business Department
330 West 42nd St.,
New York City, N. Y.

Gentlemen:-

We use maple flooring exclusively on all of our factory floors, even in concrete buildings, laying maple over sub-floor and tar concrete, which we feel adds appreciably to the comfort of the employees, and makes maintenance of machinery much less, and makes it much easier to have clean, sanitary looking floors as compared to concrete floors.

Our system of maintaining maple floors differs from the wet scouring system, in that we impregnate freshly laid floors with a high grade floor oil made up of paraffin and pine oils, and after that clean about once a week by dry brushing with power driven brush rather than by wet scouring. This treatment gives the floors a dry polish and uniform clean appearance, and the wear is absolutely negligible.

The floor shown in the picture to which you refer is now more than 22 years old, and to all appearances, and in fact in reality, just as sound and serviceable as it was the day the floor was laid. This is a general condition throughout our plant, representing many thousands of feet of flooring.

Yours very truly,

KNITTING DEPARTMENT
Wiscassett Mills Co.

C. W. GADDY.

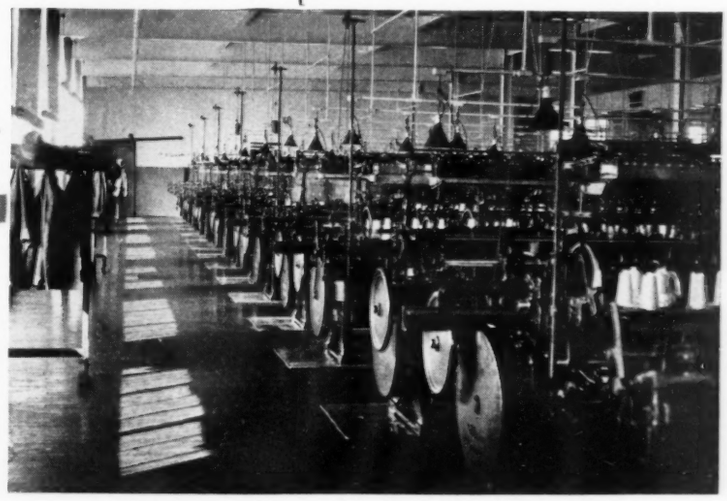
22 year old **MFMA** *Hard Maple floor in the Full Fashioned knitting room, Wiscassett Mill Company, Albemarle, N. C., described in letter shown.*

"22 years old and as good as new"..."Stays easier to clean and keeps free from lint"..."Lowers maintenance"..."The wear is negligible"—these are facts familiar to mill experience with Northern Hard Maple floors.

But modern operators also know *these* facts: Not all Maple is *Northern Hard* Maple. Only this remarkably *tough-fibred, tight-grained* Maple offers this outstanding performance. It pays to make sure of *Northern Hard* Maple flooring. The simple way to do this is to specify **MFMA*** Maple. This trademark guarantees that this flooring is *Northern Hard* Maple, conforming to the grade specified, as established by the Association. Specify **MFMA**, and you protect your flooring investment.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1794 McCormick Building, Chicago, Illinois

See our catalog data in Sweet's, Sec. 11/77. Write for photographic folder on Northern Hard Maple and leaflet on heavy-duty finishes for old or new floors.



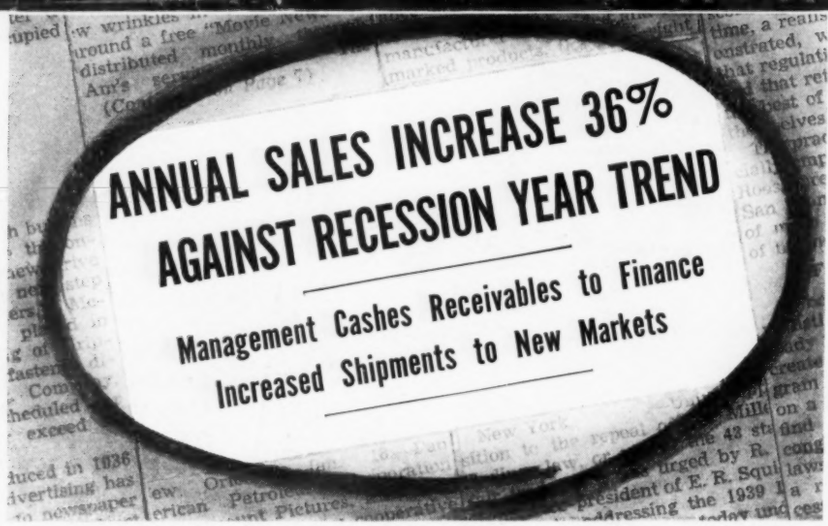
*The **MFMA** trademark, indented and stamped on Maple flooring, guarantees it to be all Northern Hard Maple, graded in accordance with the Association's exacting grade standards.

Floor *with* MFMA Maple

(REG. U. S. PAT. OFF.)

(NORTHERN HARD)

GOOD BUSINESS NEWS


ANNUAL SALES INCREASE 36%
AGAINST RECESSION YEAR TREND
Management Cashes Receivables to Finance
Increased Shipments to New Markets

FAR fields looked green to the sales executives of the BLANK* Company.

They proved to be rich and fertile territory when "NON-NOTIFICATION" OPEN ACCOUNT FINANCING solved the problem of how to finance the gap between their discounted purchases of materials and their customers' terms of payment, ten days after arrival.

Sales for 1936 had been over $2,000,000. Under existing financial arrangements, limited bank credits sometimes prevented their taking discounts. Bank loans were renewed at intervals—not reduced in several years. Additional credit from the bank was *not* available to finance new business.

With "NON-NOTIFICATION" OPEN ACCOUNT FINANCING, 1937 sales jumped 36% to $2,841,000 despite adverse general conditions. Today, they are taking discounts on *all* purchases, have cleaned up all open bank loans, and strengthened cash position to the point where half their receivables provide cash enough for all current needs.

★ ★ ★

The greater capital leverage provided by "NON-NOTIFICATION" OPEN ACCOUNT FINANCING has been a determining influence in leading many progressive concerns to make frequent use of it. A company's own need is always the deciding factor. For a full understanding of its soundness and practical advantages, write for a copy of "CAPITAL AT WORK". Address, "Dept. TM".

**A fictitious name, but the facts and figures, taken from our records, can be certified.*

COMMERCIAL CREDIT COMPANY

"Non-Notification" Open Account Financing

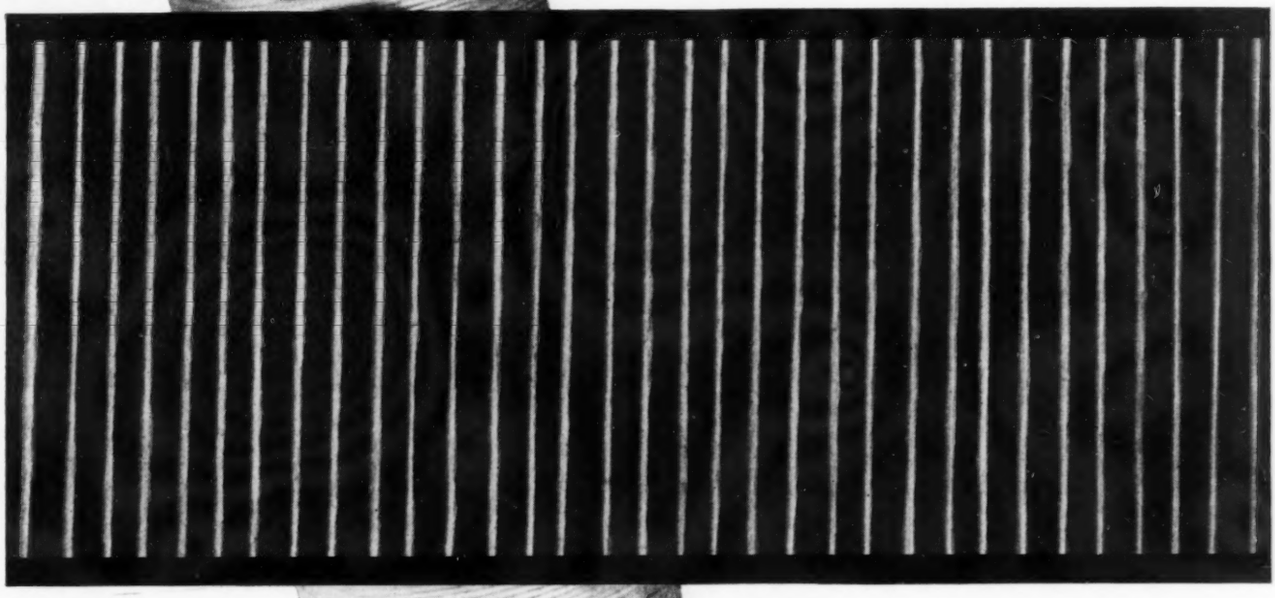
BALTIMORE

BOSTON NEW YORK CHICAGO PORTLAND, ORE. SAN FRANCISCO

CAPITAL AND SURPLUS MORE THAN $65,000,000

MODERNIZATION . . .

GEARED FOR TOMORROW'S NEEDS



33 strands of Roving on this blackboard, show a high degree of uniformity. Roving like this will make yarn of good appearance, possessing satisfactory weaving qualities. The illustration shows a slight reduction.

Ready when you are . . .

SACO-LOWELL EQUIPMENT IS QUICKLY ADAPTED TO PROCESSING . . .

SYNTHETIC STAPLE FIBRES

WITH THE GROWING INCREASE in the manufacture and demand for staple fibre, modernization plans should be more carefully considered than ever before. Saco-Lowell equipment anticipating future developments can be quickly adapted without expensive change-overs to handle these new fibres either alone or mixed with cotton. Today there are a number of leading mills producing all numbers from 8's to 100's on Saco-Lowell equipment.

Our engineering staff will be pleased to discuss these details with you.

SACO-LOWELL SHOPS

60 Batterymarch Street, Boston, Massachusetts

Charlotte, N. C. Atlanta, Ga. Charleston, S. C.

A DOUBLE SAFEGUARD

● The workman's eyes are protected, not only by a metal guard which covers the high-speed grinding wheel, but by a sturdy pair of goggles as well. Twofold protection.

...YOU CAN DEPEND ON THIS CAUSTIC SODA THAT IS *TWICE* PURIFIED

●Low in salt content, low in carbonates, and extremely low in iron, the electrolytic caustic soda produced by this Company is offered to the textile industry in an exceedingly pure form that meets the most exacting requirements.

These advantages are made possible by an additional manufacturing process which is in effect a double purification. Impurities are so effectively removed that you will find this caustic soda fully dependable for use in your processes.

It is supplied in aqueous solution in 8,000 gallon tank cars as well as in solid, flake, or ground form in drums. Our technical staff will gladly help with all questions of pumping, piping, and dissolving. Why not write us today? Pennsylvania Salt Manufacturing Company, Widener Bldg., Philadelphia, Pa.
New York · Chicago · St. Louis · Pittsburgh · Tacoma · Wyandotte

We also produce high-grade electrolytic Hydrogen Peroxide, 100 volume, for use as a fool-proof bleaching agent. It is supplied in glass carboys, and aluminum drums. Stocks are conveniently located, and our service department is skilled in textile plant operation—ready to help with any difficult problems.

Other Pennsylvania Salt Products for the Textile Industry

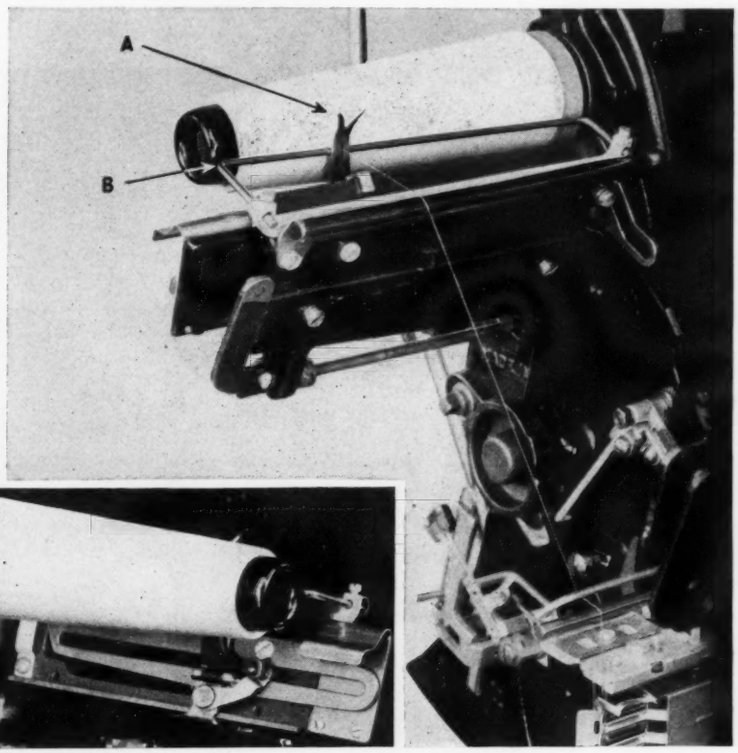
Soda Ash
Sulphuric Acid
Hydrochloric Acid
Anhydrous and Aqua Ammonia
Sodium Hypochlorite
Carbon Bisulphide
Ammonium Persulphate

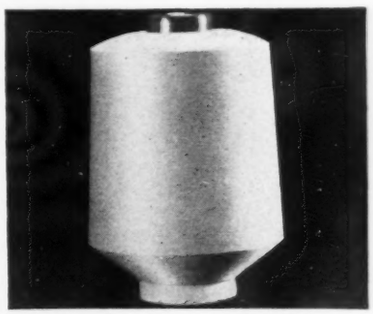
PENNSYLVANIA SALT MANUFACTURING COMPANY
Chemicals

THIS IS NO. 14 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation





Pineapple Cone — 3°30′ taper, 5″ cam, 2½ winds, 1250 R. P. M.

NEW PINEAPPLE CONE ATTACHMENT (#50 WINDER)

At the Greenville and Philadelphia Shows you will see in operation the new Pineapple Cone Attachment for the No. 50 Leesona Winder.

Self-Aligning Pressure Bail

The Adjustable Pressure Bail (B) makes it possible to wind 3°30′ and 5°57′ cones without changing the Traverse Frame Back. It is only necessary to change the Cone Holder. The Bail, being pivotted from the center of the Traverse Frame Back, is self-aligning with the taper of the cone.

The Bail contacts the package distributing the pressure over the full length of the traverse. Soft packages can be wound having a densometer reading of 40 points or less; by adding tension and pressure harder packages can be produced having a reading of 60 or 65 points.

The yarn traverses over the Bail, thus maintaining the proper delivery point the full length of the traverse. The correct lay of yarn from one end to the other makes it possible to obtain taper-end packages without distortion near the end of the traverse.

Slotted Thread Guide

The slotted thread guide (A) is held against the Bail by a light spring. As the guide is tipped at the ends of each stroke, the yarn, delivering over the Bail, contacts the guide up and down the slot, thus distributing the wear.

Speed

It is not necessary to change speed or number of winds when changing to the new Pineapple Cone Attachment, although better formed packages will be produced with 2½ winds.

Shape of Cone

We received many requests from knitters and throwsters for a cone that would have more taper on the base than on the nose. We made a very careful investigation and found that there was a distinct preference for a Pineapple Cone with a 40° taper at the base and about 15° taper on the nose. A cone of this shape has definite advantages for knitting as well as for winding, so we have designed our attachment to build this shape of cone without adjustment. All cones produced will have a standardized shape which should be of benefit to knitters and throwsters alike.

Spindle Driving Gears (No. 90 Winder)

Spindle driving gears are manufactured in one piece, but are designed to be easily split. Old gears can be removed with a screwdriver or cold chisel forced into the saw cut. New gears should also be split, as shown in the illustration, making it unnecessary to remove the drive shaft when making a change.

"THERE'S A UNIVERSAL WINDER FOR EVERY TEXTILE NEED"

UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA

TWO NEW WESTINGHOUSE

NEW LOOM SWITCH

THE "DE-ION" MOTOR WATCHMAN

- Toggle switch clearly indicates On, Off, or Tripped positions.
- "De-ion" Arc Quenchers prevent flashover, prolong contact life.
- Westinghouse bi-metal relay gives accurate overload protection regardless of the number of times it is called on to protect the motor.

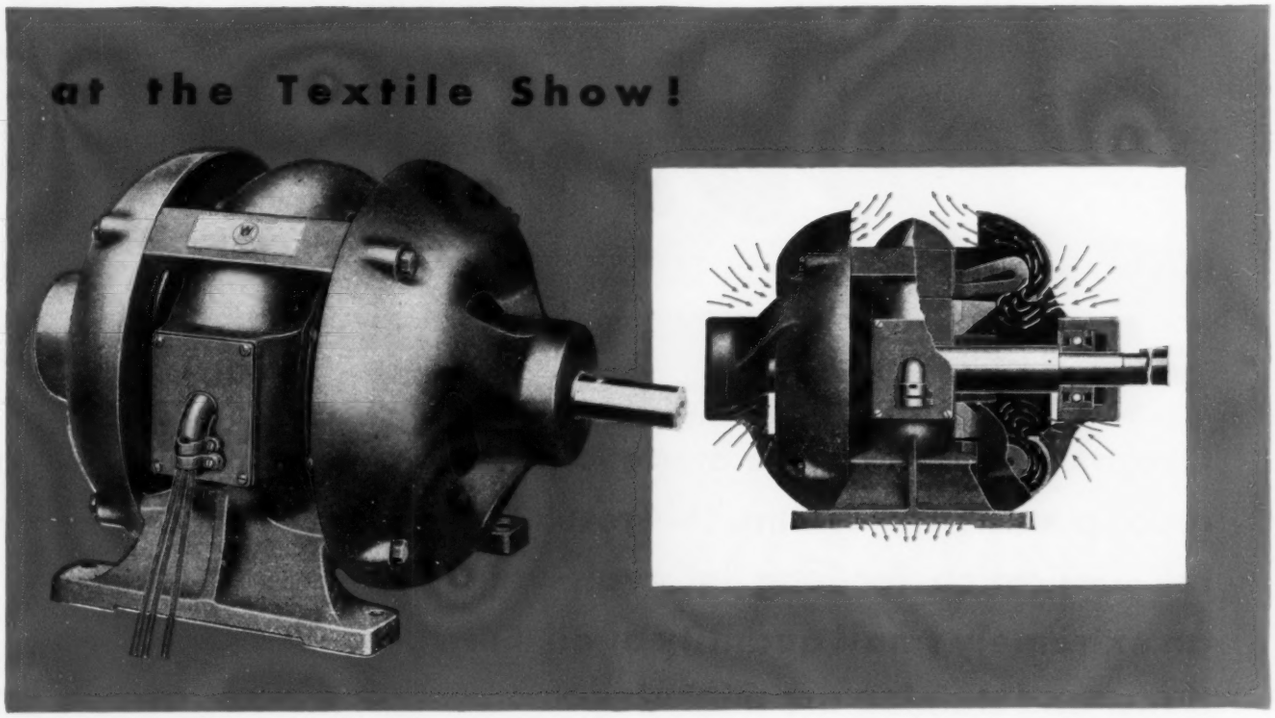
SEE IT AT THE WESTINGHOUSE EXHIBIT • BOOTHS 417-419

Westinghouse W WESTINGHOUSE ELECTRIC

DEVELOPMENTS

FOR THE TEXTILE INDUSTRY

at the Textile Show!



NEW LINT FREE MOTOR

WITH:

★ Air path unobstructed.
★ Smooth, slick windings.
★ Permanently sealed bearings.
★ Streamlined contours in brackets, fans and parts. Eliminates fittings that catch lint.

The cleanest running textile motor yet developed.

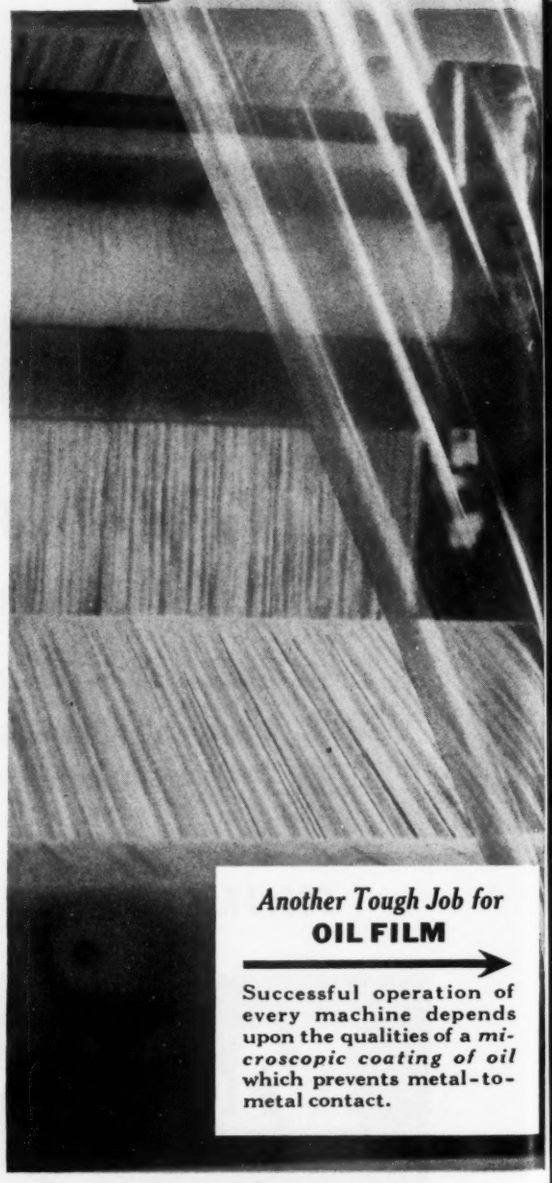
SEE IT AT THE WESTINGHOUSE EXHIBIT • BOOTHS 417-419

J-20822

Motors and Control

WHEN GARGOYLE VACTRA OILS

Spotting is



Gargoyle Vactra Oils are made to have great persistence-of-film. This results in full lubrication for long intervals with an extremely small quantity of oil. Oil throw and staining are minimized!

These oils also have great film strength that resists film rupture...minimizes wear and saves on power. Gargoyle Vactra Oils are the finest oils for your looms!

THE SOCONY-VACUUM man offers you a complete line of lubricants, plus these *exclusives:*

The right lubricant for every machine...and new lubricants ahead of new needs...developed by world-famous research laboratories through close cooperation with machine builders.

73 years' experience—thousands of case histories—to guide in prescribing the right use of these lubricants to gain Lubrication Profits for you.

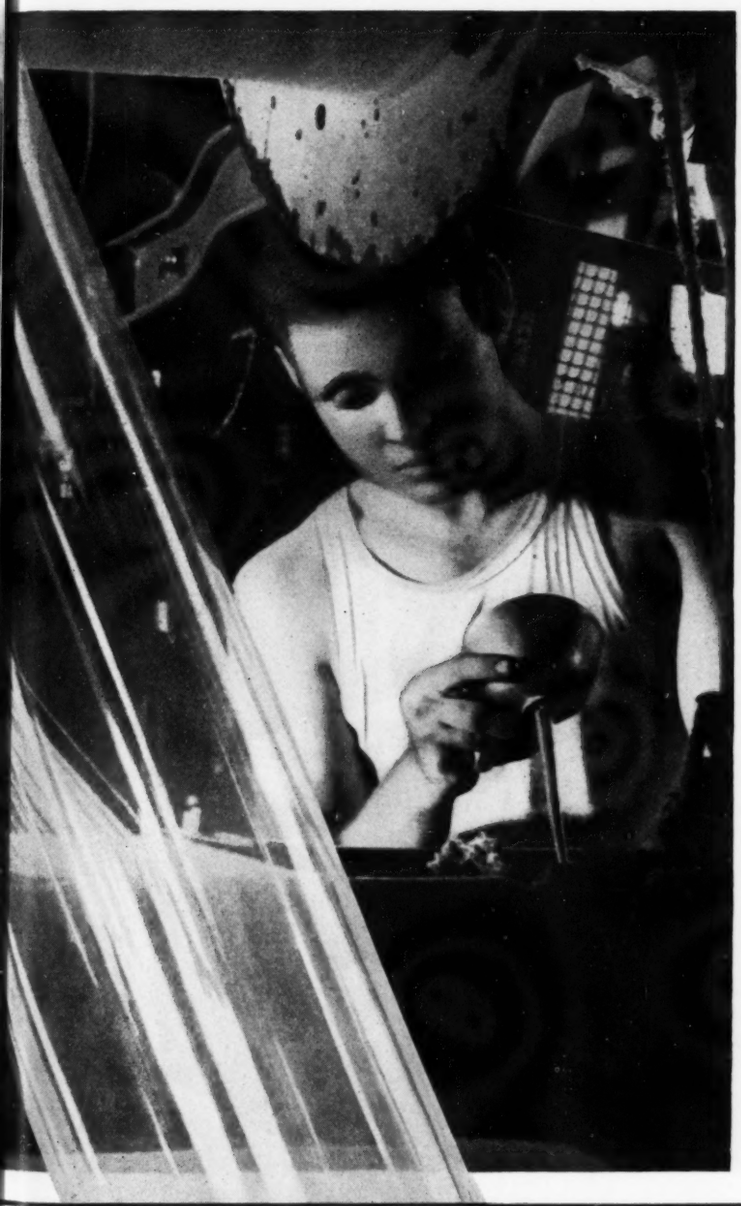
World-wide distribution and guaranteed uniformity—the same quality available everywhere.

Another Tough Job for
OIL FILM

Successful operation of every machine depends upon the qualities of a *microscopic coating of oil* which prevents metal-to-metal contact.

ARE USED ON LOOMS—

"on the Spot"

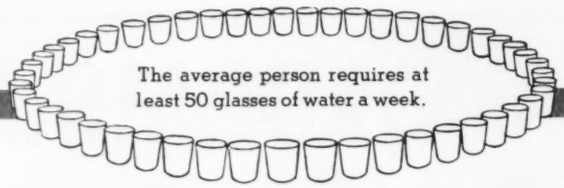


SOCONY-VACUUM

Industrial Service and Lubricants Help to Lower Costs by

Correct Lubrication

GARGOYLE Lubricants



FASTER COOLING

AT LOWER COST

WITH THESE ADVANCED FEATURES

A double barreled blast at water cooler operating costs. That's what Westinghouse engineers have delivered with two amazing new developments. First, a Special Capacity Booster that utilizes cold drain water to help cool incoming water. Second, a Cooling Chamber that steps up efficiency by over-all cooling action at both center and circumference.

Other Exclusive "PLUS VALUE" Features

Stainless Steel Top . . . Built-in Watchman Protection . . . Permanent Oil Supply . . . Burnout-Proof Motors . . . Hermetically-sealed Mechanism.

No grit, dirt, rust or corrosion . . . the things that cause most machinery to wear out, can harm the Westinghouse mechanism because it is Hermetically-sealed inside an airtight case of solid steel.

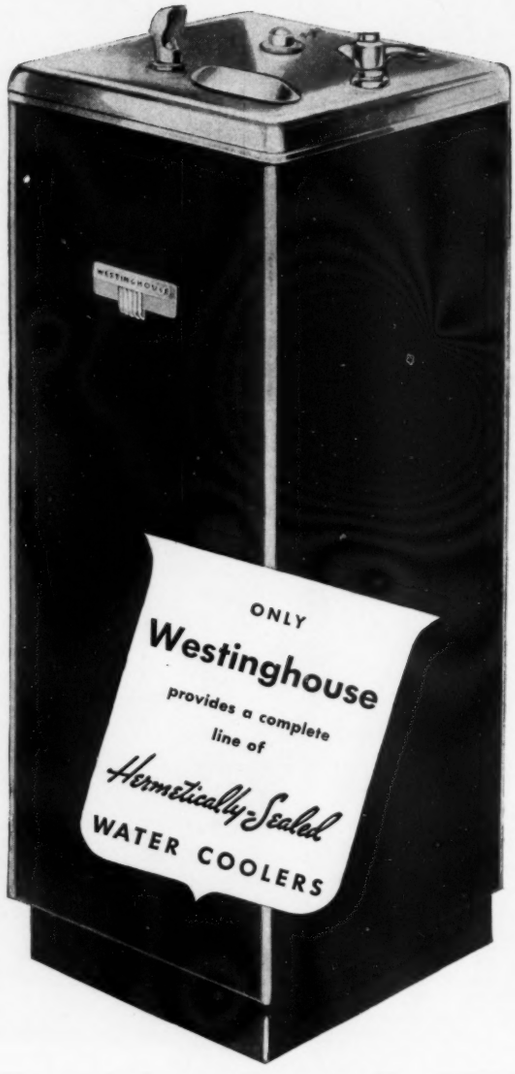
Because it is Hermetically-sealed, Westinghouse provides a plan for five years' protection on the sealed-in mechanism. This is based on the EXTRA years of trouble-free performance which experience shows you can confidently expect.

• • •

Westinghouse

WATER COOLERS

Explosion-proof models available



FREE. Ask your Westinghouse dealer for free copy of a useful folder—"How to Check Drinking Water Costs" or mail this coupon to—Westinghouse Electric & Manufacturing Company, Section 9042, Mansfield, Ohio.

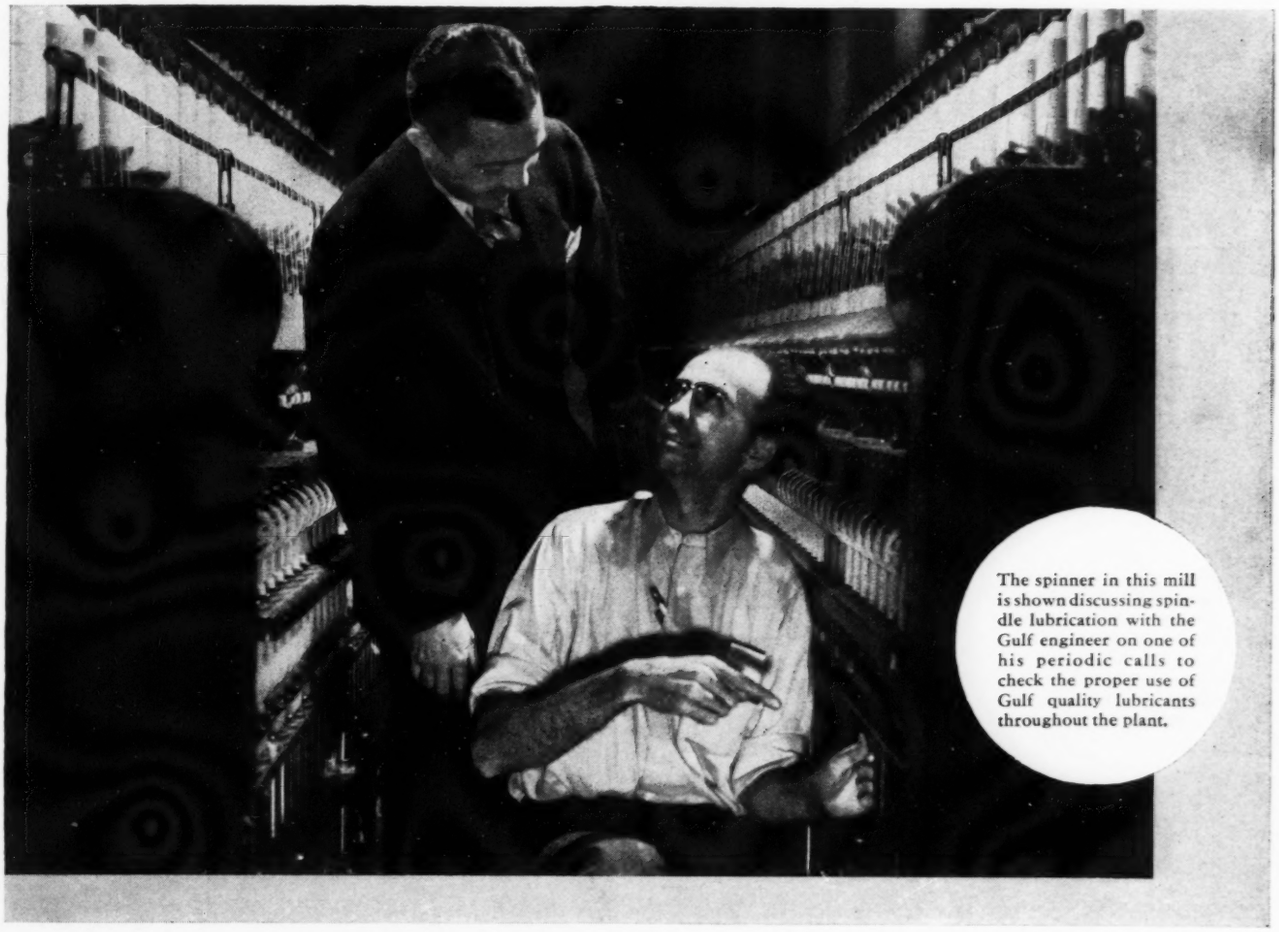
NAME_____

ADDRESS_____

CITY_____ STATE_____

"We get better production from our spinning frames with GULFGEM OIL"

... SAYS THIS MILL SUPERINTENDENT



The spinner in this mill is shown discussing spindle lubrication with the Gulf engineer on one of his periodic calls to check the proper use of Gulf quality lubricants throughout the plant.

"This quality oil has helped us maintain efficient operation with higher speeds and longer draft"

"WE regard the use of Gulfgem Oil as *production insurance* in our mill," says this superintendent. "This quality oil has helped us improve our production materially."

One important reason why Gulfgem Oil gives better results for spindle lubrication is that this unusual lubricant has been specially refined and purified by Gulf's exclusive Alchlor Process. By the use of this famous process, oils of greater stability than any of which we have record can be manufactured. Thus, you are assured of a spindle lubricant which possesses maximum stability and resistance to oxidation and gumming.

Let a Gulf engineer recommend the proper application of this quality oil to your spindles. More than likely, he can help you effect worthwhile reductions in power and maintenance expense. So why not get the benefit of his broad experience with lubrication problems in many plants similar to yours?

GULF OIL CORPORATION • GULF REFINING COMPANY

GENERAL OFFICES: GULF BUILDING, PITTSBURGH, PA.

GULF INDUSTRIAL LUBRICATION

Also a complete line of Fuel and Furnace Oils

A SERVICE that finds its chief purpose the ***profitable*** turnover of merchandise . . . ***that*** is "Constructive Factoring" . . of which we will be only too glad to tell you more.

MILL FACTORS CORPORATION

354 Fourth Avenue, New York City

IF you are still using hydro extractors and old type dryers in your dye house, it will pay you to investigate modern Hunter equipment. It will pay you to get details of savings in labor, horsepower, steam and floor space in specific installations.

Mail the coupon. Hunter will send, without obligation to you, complete details on the new Hunter rotary feeder, patented hydraulic squeeze rolls, blower systems and duplex dryer for continuous operation.

Hunter will tell you how and why the Rotary Feed will open wet stock as no standard feeder can — how the flow of production from the dye kettles to the picker room or bins can be made continuous and at a lower cost than ever before. For specific savings in specific installations mail the coupon to:

JAMES HUNTER MACHINE CO., NORTH ADAMS, MASS.

SOUTHERN AGENTS:
Carolina Specialty Co.,
Charlotte, N. C.

WESTERN REPRESENTATIVE:
E. G. Paules,
343 Bendix Bldg., 1206 Maple St.,
Los Angeles, Cal.

Please send me complete details of new Hunter Dye House Equipment.

Name _____

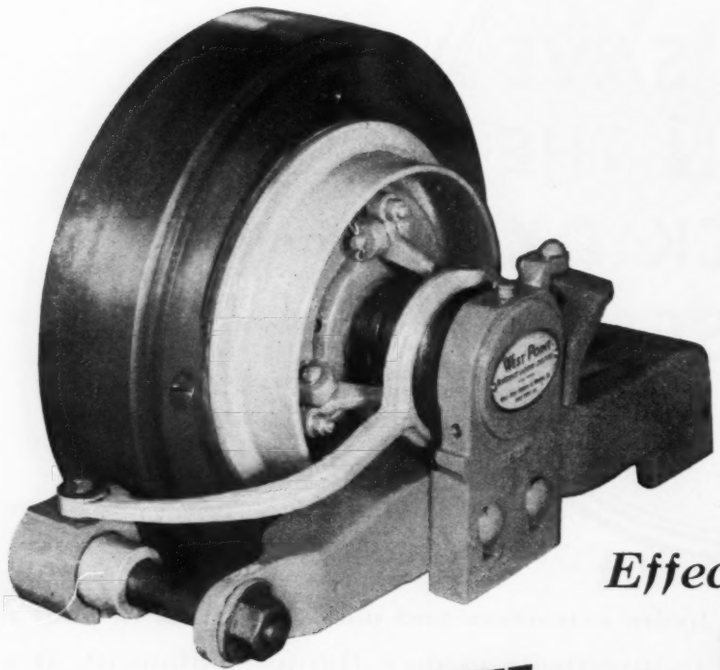
Position _____

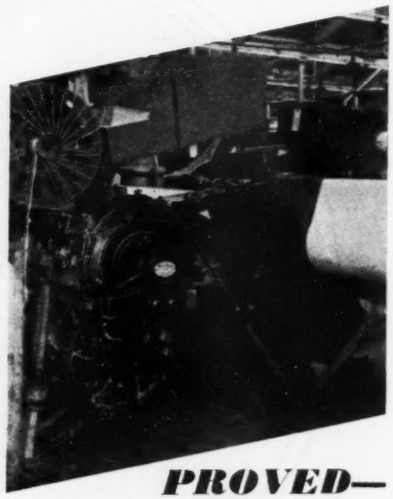
Company _____

City _____

State _____

ENERGY LOOM DRIVES





PROVED—
By Performance

Effect
WEAVE - ROOM SAVINGS
Lower Operating Costs—Increased Production

Invest In West Point Energy Loom Drives

For effecting savings in Weave Room production, the current trend in improvement is to the Energy Loom Drive, because:

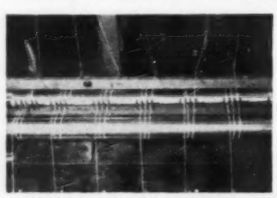
1. It makes possible higher production per loom per hour.
2. It provides for smoother loom operation.
3. It allows the utilization of the group principle of operation, with a reduction in the total power cost per yard of cloth produced.

Operators of machines which develop a fluctuating load can readily realize the possibilities of the Energy Drive, and the saving its principle can effect in time and operating costs.

Write for fully descriptive folder, describing the advantages and operation of the West Point Energy Loom Drive.

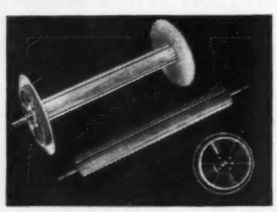
Also manufacturers of special textile machinery, cloth room machinery and textile repair parts. *Inquiries are solicited.*

Other WEST POINT Products



THE BACHMAN GUIDE . . . eliminates heavy top rollers. "Blow Outs" reduced about 90%. Permits increase in twister speed.

LOOM BEAMS AND BEAM-HEADS . . . West Point loom beams and beam-heads are superior in their operation and economy.

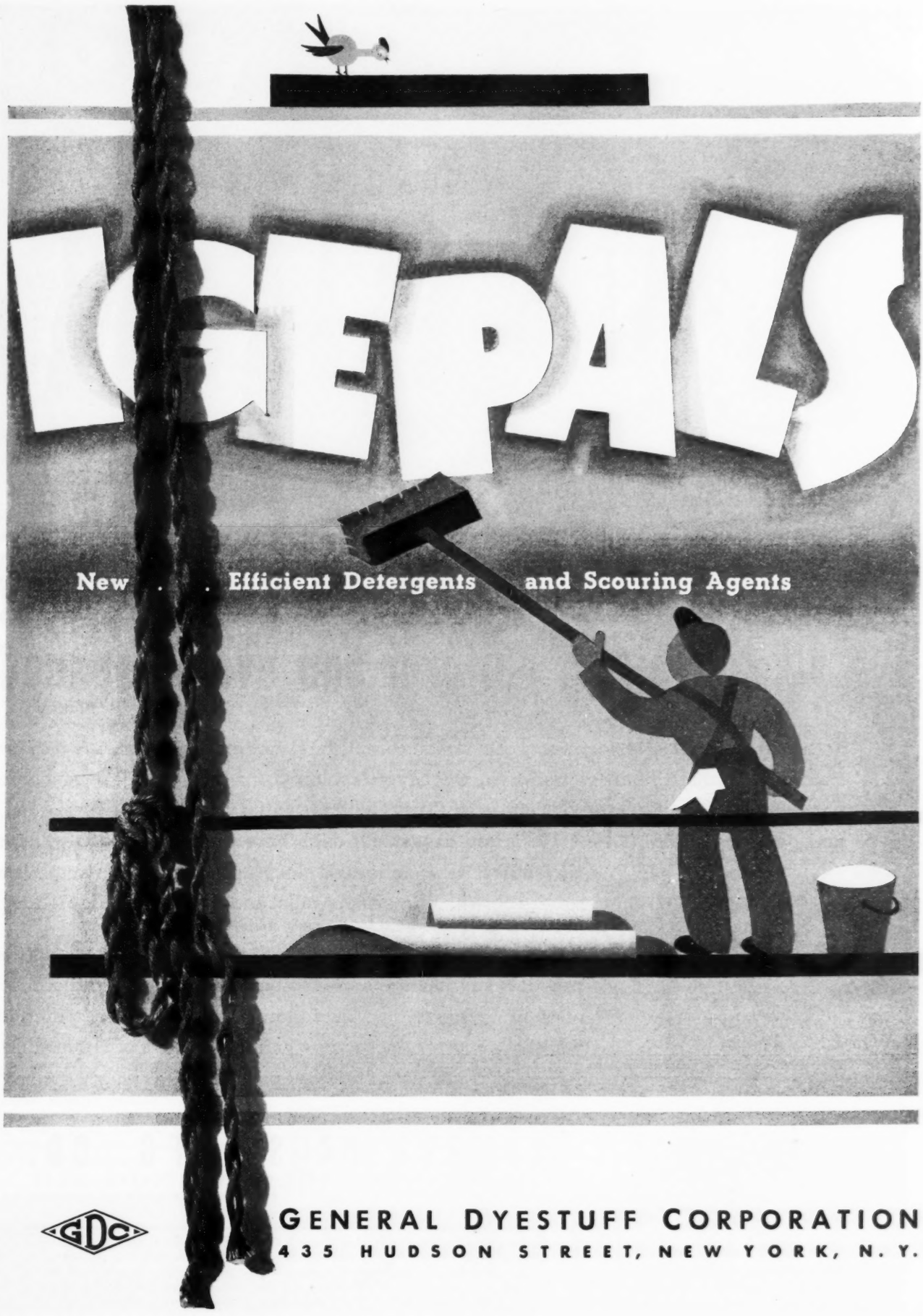


GEARS . . . Gears of all types—noted for their efficiency and durability.

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA



GDC

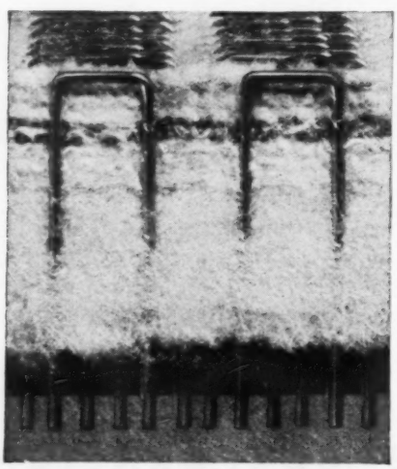
GENERAL DYESTUFF CORPORATION

435 HUDSON STREET, NEW YORK, N. Y.

Teeth in TUFFERIZED Card Clothing are also straight, uniform and evenly spaced

PATENT APPLIED FOR

Radio City Music Hall Rockettes, world famous precision dancers, devote hours to tedious training. Through hours of research, we have developed the new precision machine parts which make the wires of Tufferized Card Clothing uniform in size, evenly spaced, and perfectly straight. New Tufferized shears cut each wire clean and sharp without wire burrs. New Tufferized doublers form each wire with a square crown. Wires are parallel and exactly the same length.



Micro-Photograph shows how Tufferized Card Clothing wires seat square, flat, and firmly into the foundation with wires parallel . . even in length . . spaced uniformly

Tufferized Card Clothing made to these precision standards prevents any change or variation in position when mounted on your cylinders. It allows closer and more even setting of your rolls and produces more uniform and smoother carding.

Write for additional information or ask our Representative

HOWARD BROS. MFG. CO.

HOME OFFICE AND FACTORY: **WORCESTER, MASS.**

Southern Plant: 244 Forsythe St., Atlanta **Branch Offices:** Philadelphia, Dallas

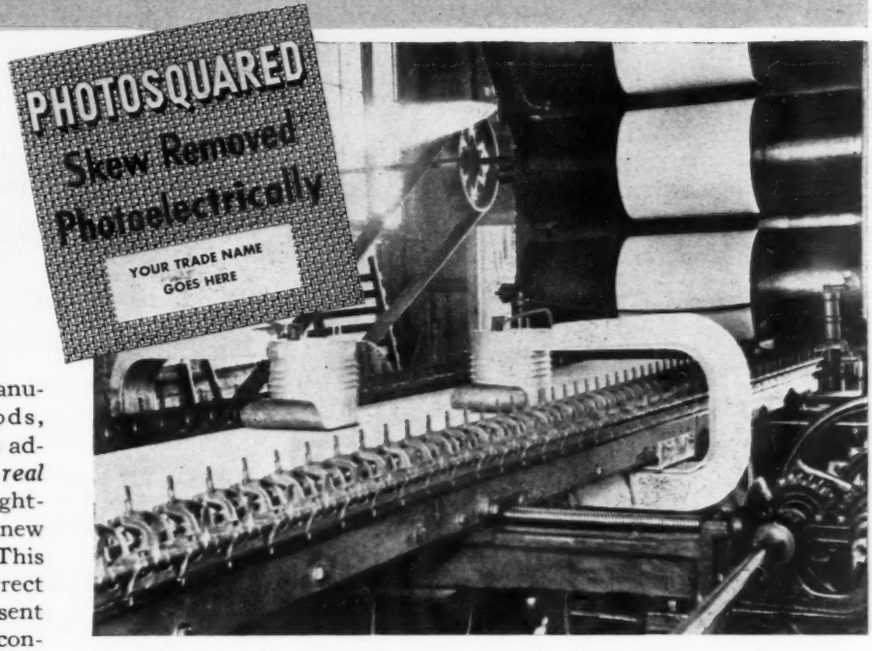
Canadian Agents: Colwool Accessories, Ltd., Toronto 2, Canada

Products: Card Clothing for Woolen, Worsted, Cotton, Asbestos, and Silk Cards—Napper Clothing, Brush Clothing, Strickles, Emery Fillets, Top Flats Recovered and extra sets loaned at all plants—Lickerins and Garnett Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant—Midgley Patented Hand Stripping Cards, Howard's Special Hand Stripping Cards and Inserted-Eye and Regular Wire Heddles

See us at the Southern Textile Exposition, Booths 242 and 243

How PHOTOSQUARED CLOTH HELPS SELL

Advantages of Photoelectric Weft Straightening Apply Both to Finishers and to Manufacturers of Finished Cloth Goods



Use of this design as shown above is available to finishers for labeling cloth processed by photoelectric weft-straightening control

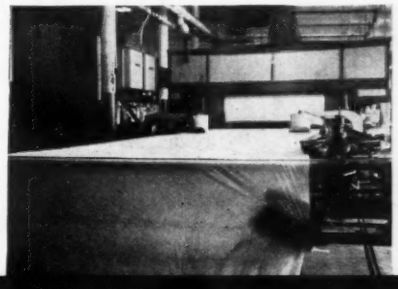
TO both fabric finishers and manufacturers of finished goods, PHOTOSQUARED cloth* presents advantages of high-quality that are *real sales* points. Photoelectric weft straightening can be applied either to new tenters or to tenters now installed. This system will instantly detect and correct skew at speeds up to the highest present tenter operating rate. It will operate continually with the tentering process, because, once the control is adjusted to a particular fabric, detection and correction or any skew are automatic. This system has been successfully applied to sheeting and birdseye.

To the cloth finisher, PHOTOSQUARED cloth provides the following advantages:

1. Less spoilage, because of absence of skew.
2. Faster production, less stopping for inspection.
3. Better finishing guarantees made possible.

To their customers, finishers can point out that PHOTOSQUARED cloth:

1. Is straight cloth—cloth that can be cut square with less waste.
2. Requires less allowance for trimming.
3. Will hold its shape, handle more easily.



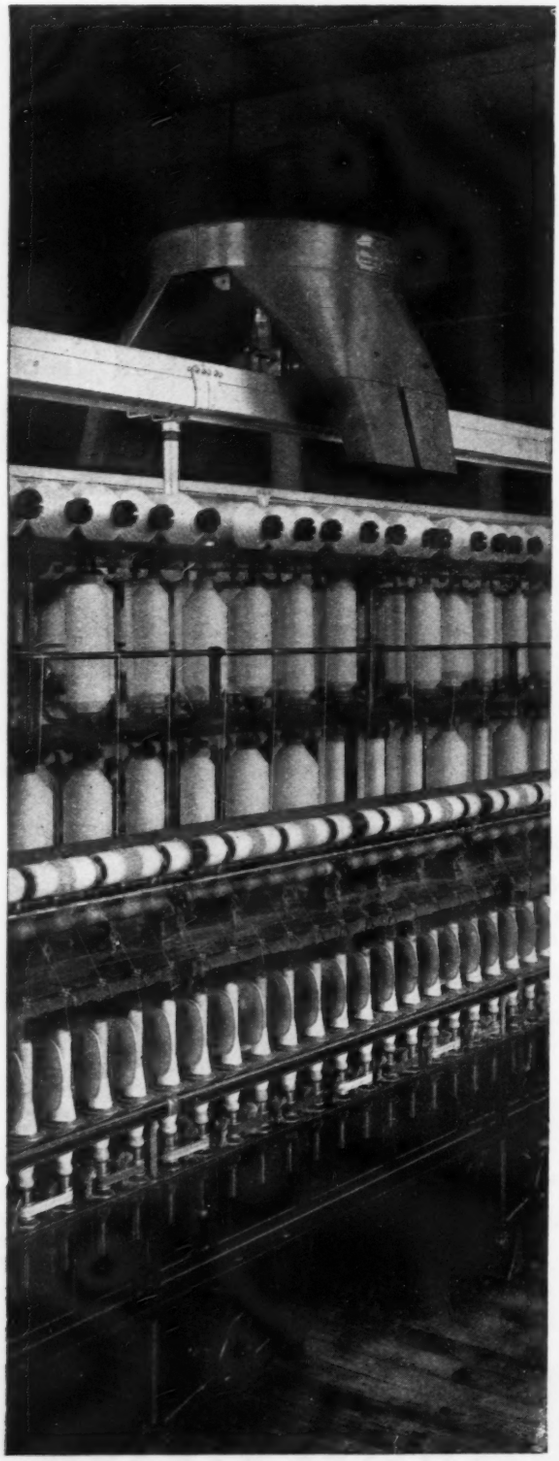
Already a half-dozen mills are using this advanced method of assuring straight cloth. For information regarding its application in your mill, send data on the speed range of your tenters, samples of cloth, rating of tenter, motor drive, and mill voltage. Address your inquiry to Winsor & Jerauld, Providence, R. I., or to General Electric, Schenectady, N. Y.

*PHOTOSQUARED IS THE TERM DEVISED TO DESCRIBE CLOTH FINISHED BY USE OF PHOTOELECTRIC WEFT-STRAIGHTENING CONTROL. General Electric developed this control, and the COMPLETE straightening equipment is sold by Winsor & Jerauld, Providence, R. I.

GENERAL ELECTRIC

011-475

Six Million Spindles *can't be wrong*



IN tomorrow's cotton mill . . . what? What methods for insuring quality of product and increasing quantity? What methods for decreasing waste . . . and imperfections.

Perhaps nothing radical . . . since today's leading cotton mills are laboratories constantly proving the worth of all new methods. Tomorrow's cotton mills, to survive, must have them all . . . all that have been found practical . . . and worth while.

A Parks' Traveling Cleaner system is one of tomorrow's proven methods . . . available today, demonstrating that mechanical and automatic cleaning makes spinning easier, and better . . . and soon pays for itself.

Experiences drawn . . . not from a few isolated cases, but from hundreds of representative mills . . . proclaim that

Six Million Spindles can't be wrong!

PARKS

Traveling Cleaners

PARKS-CRAMER CO • FITCHBURG, MASS. • CHARLOTTE, N. C.

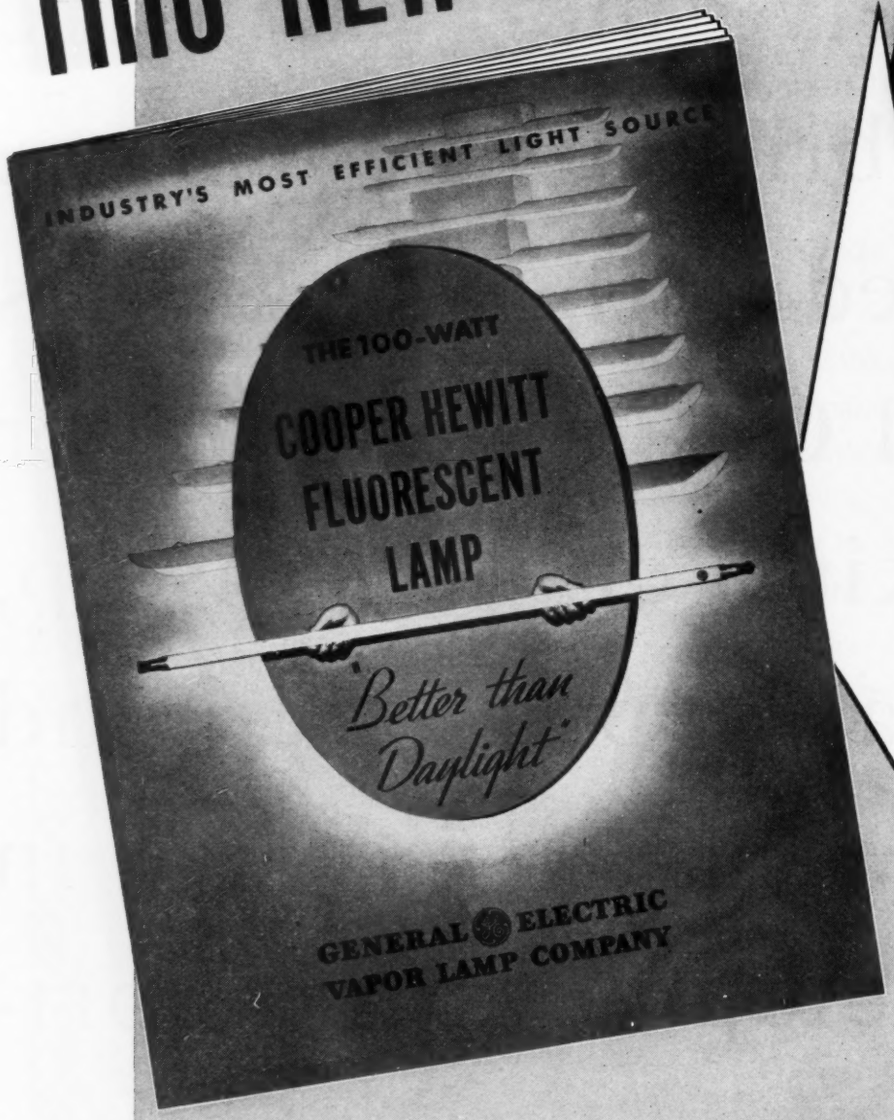
● With each container of STANDARD OIL LUBRICANTS you receive more than the actual lubricants themselves. ...Enclosed in that package is Standard Oil's reputation for painstaking craftsmanship, dependable products, and half a century of research in the development of lubricants for textile machinery.

STANDARD OIL COMPANY

INCORPORATED IN KENTUCKY

THIS NEW BOOK

gives the story of industry's newest and most efficient light source



HIGH LIGHT OUTPUT
HIGH EFFICIENCY
LONG LIFE
COOL BLUE WHITE LIGHT
ELECTRICAL CHARACTERISTICS
RECTIFIED AC ARC CIRCUIT
LOW INSTALLATION COST
NO DARK SHADOWS
NO EYE FATIGUE
DUST TIGHT
SPECIFICATIONS
FOOT CANDLE TABLE

Higher, more productive illumination levels at less cost. Elimination of annoying shadows, glare and eye-fatigue. These are some of the many advantages of this new blue-white industrial light source. » » » Write for a copy of this book. It's freely offered.

GENERAL ELECTRIC VAPOR LAMP COMPANY

931 F

GENERAL ELECTRIC VAPOR LAMP COMPANY, 853 ADAMS STREET, HOBOKEN, NEW JERSEY

A NEW WARCO SYNTHETIC DETERGENT

THIS new product, having powerful detergent, scouring and wetting properties, immunity to alkaline or acid baths, hard water or metallic salts, and exceptional rinsing speed, makes a clean sweep of all the old familiar wet processing difficulties, regularly encountered when using ordinary soap.

It effects important operating economies too, only small amounts and no assistants being required. Sulfanole P B is suitable for use in scouring, boiling off or dyeing of piece goods, raw stock or hosiery,—cotton, wool, silk or rayon.

Make a "clean sweep" of wet processing headaches in your plant. Let us recommend a formula.

WARWICK CHEMICAL COMPANY

WEST WARWICK, R. I.

FACTORIES IN WEST WARWICK, R. I. AND ROCK HILL, S. C.

BRANCH OFFICES at Bethlehem, Pa.; Philadelphia, Pa.; Paterson, N. J.; Burlington, N. C.; Griffin, Ga.; 580 Fifth Ave., New York, N. Y.

IMPREGNOLE CORP., Sales Agents for IMPREGNOLE, 580 Fifth Avenue, New York, N. Y.

While visiting the Thirteenth
SOUTHERN TEXTILE EXPOSITION
April 3-8 in Textile Hall, Greenville, S. C.

TAKE TIME TO INVESTIGATE THE MONEY-SAVING ADVANTAGES OF INTERNATIONAL TIME RECORDERS AND ELECTRIC TIME SYSTEMS

BUSINESS INTERNATIONAL MACHINES

TIME STAMP

TIME RECORDER

JOB TIME RECORDER

INTERNATIONAL BUSINESS MACHINES CORPORATION

World Headquarters' Building
590 MADISON AVENUE, NEW YORK, N.Y.

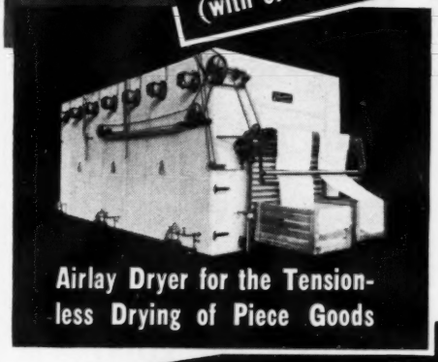
BUSINESS INTERNATIONAL MACHINES

Branch Offices
IN PRINCIPAL CITIES OF THE WORLD

A GOOD INVESTMENT

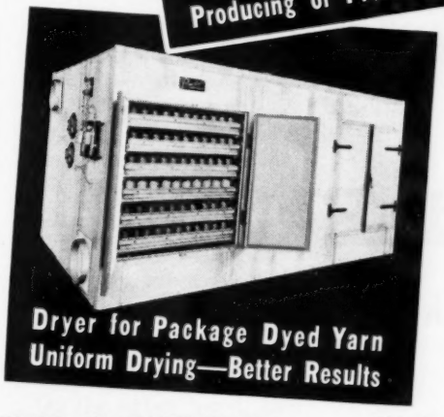
Festoon Dryer for Piece Goods (with or without Rolling Girts)

New PROCTOR DRYERS



Airlay Dryer for the Tensionless Drying of Piece Goods

Automatic Skein Yarn Dryer for Producing or Processing Plants



Dryer for Package Dyed Yarn Uniform Drying—Better Results

Super Dryer for Raw Stock Saves floor space, steam, power

You wouldn't run the risk of operating your plant without carrying Fire Insurance. . . .

Don't run the risk of loss of production, loss of orders, poor drying and high drying costs, by operating out-of-date dryers. . . .

Modernize with new up-to-the-minute PROCTOR DRYERS and you'll get better drying, faster drying, and lower drying costs. . . .

Many wide-awake concerns are now getting handsome returns on their investments in modern PROCTOR DRYERS.

The illustrations here show only a few of the many types of dryers built by Proctor & Schwartz for the textile industry

PROCTOR & SCHWARTZ · INC · PHILADELPHIA

BUILD NEW PICKERS
RIGHT INTO YOUR OLD FRAMES

No matter how old the picker frames are, they are just as good as new if not cracked or broken.

About half the cost of a new picker is in the frame, and by putting all new parts into the old frames, you have new pickers.

You not only save the cost of making the new frames, but the freight and installation charges on this.

Aldrich Synchronized Single Process Pickers fed with the Gyrator Cleaning, Blending and Distributing Machine, have consistently produced cleaner and evener card sliver than any other picking system.

AldricH MachinE

Greenwood, **WorkS** South Carolina

In cotton finishing, from starch cooking to final regulation of moisture content, Taylor Automatic Control helps you standardize cloth output and quality and reduce your costs.

DO you have difficulty in giving your cotton cloth the proper hand? Does it tend toward the "papery" side today and toward the "thready" side tomorrow? Can you consistently produce the finish you want? Do you get cloth with a uniform hand throughout a full day's run —and from day to day?

The way your mill controls temperature in the finishing process can make a material difference in the way you answer these questions.

Manual control allows chances for variations in starch cooking, in its application, and in the final cloth.

On the other hand, there is available automatic control of temperature for the whole process. And Taylor offers you a proved system of control starting with cooking of the starch.

In over 100 textile mills Taylor engineers have placed over 500 size cooking kettles in the slashing process under automatic time and temperature control. Here is a wide experience in the handling of starch solutions, which can be applied to the most efficient preparation of the finishing material. Taylor Time and Temperature Control sees to proper mixing or cooking and often makes possible the use of a simplified formula that saves money in starch.

Uniform Penetration

For application of the finish to the cloth, Taylor Control of temperature results in the uniform coating or penetration you want and in maintenance of the proper hand every time you repeat a specific finish.

In the final drying, Taylor Control enables you to dry to a uniform moisture content so that subsequent calendering will "take" uniformly.

Let us show you how you can apply this entire Taylor System of Control to your mill. Each mill is a separate problem to Taylor engineers. Each Taylor System is engineered to meet an individual mill's need. You will find that the results of such control will pay you real dividends in a comparatively short time. For more information on Control of Cotton Finishing, ask a Taylor Representative or write direct to Taylor Instrument Companies, Rochester, N. Y. Plant also in Toronto, Canada. Manufacturers in Great Britain — Short & Mason, Ltd., London, England.

Taylor

Indicating / Recording • Controlling

TEMPERATURE, PRESSURE, FLOW
and **LEVEL INSTRUMENTS**

13th SOUTHERN TEXTILE EXPOSITION

April 3 to 8, 1939

TEXTILE HALL

Greenville, South Carolina

Standard and improved installations, machinery, accessories, building and operating supplies, primary and fabricating materials, parts, and office equipment will be displayed at the Exposition.

Tickets will be given to those engaged in the textile industry, including executives, office and operating personnel, department heads, assistants, and operatives.

Southern Railway will operate special sleeping cars daily, from Greensboro and from Atlanta, to be parked in Greenville all day, as has been done for past expositions. As a convenience to northern visitors special Pullman cars will be parked at Greenville daily, leaving at 5:25 P. M. for New York.

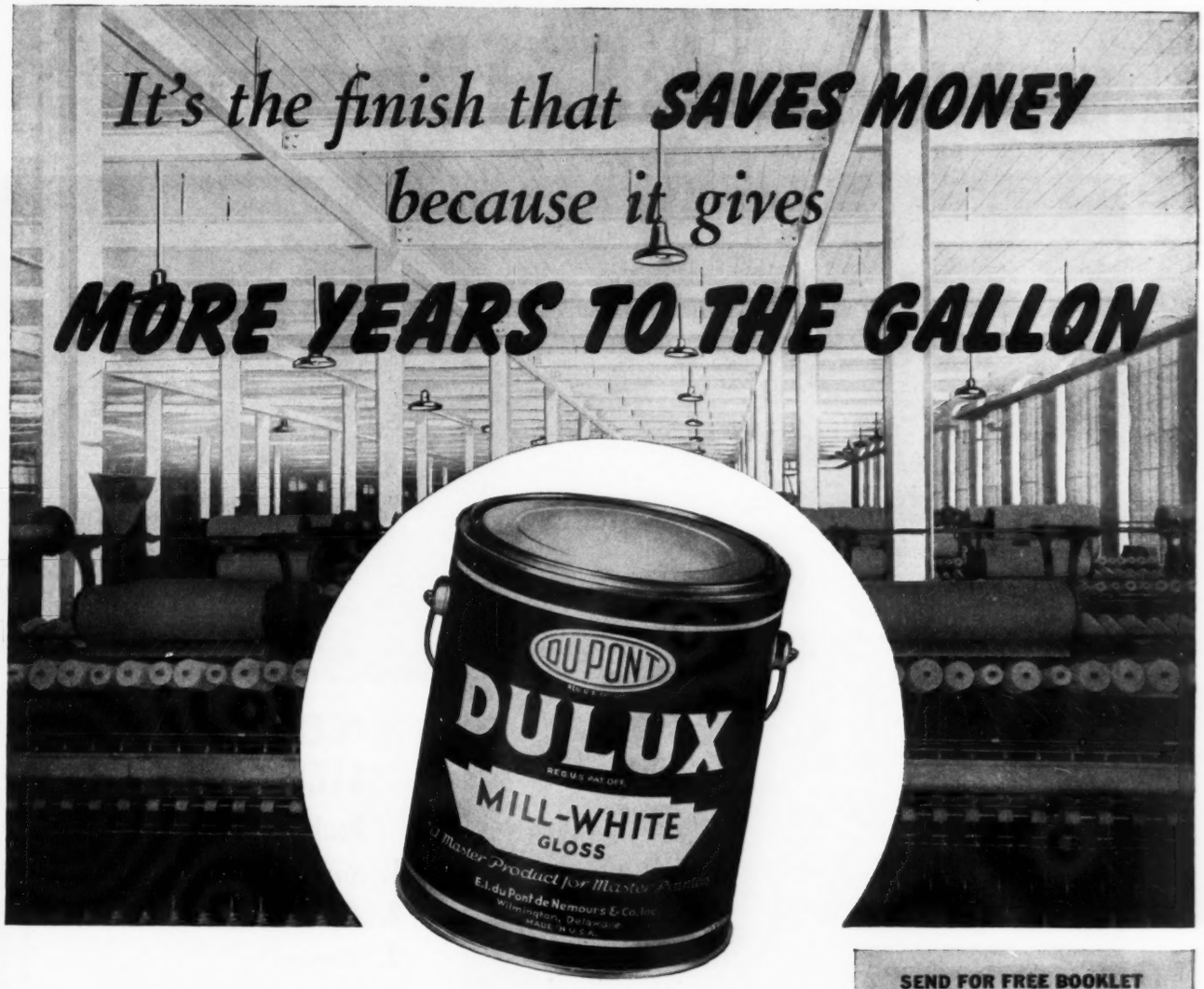
Our Rooms Committee will have many rooms available, so that all who attend the Exposition may be assured of comfortable quarters.

This exposition is for those allied with the textile industry. Due to the large attendance and crowded aisles children under sixteen years cannot be admitted.

TEXTILE HALL

Greenville, S. C.

IT STARTS WHITER...IT STAYS WHITER

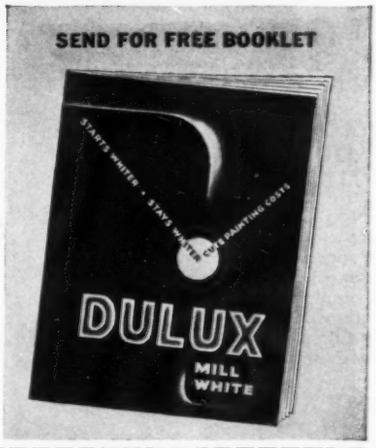


DURING the past few years, modern chemistry has made sensational paint discoveries.

In the foreground of these new paints is the sensational DULUX Mill White . . . the brilliantly white finish that keeps its whiteness an amazingly long time.

DULUX is a hard, tough finish as smooth and washable as tile. It can stand severe punishment. It does not readily chip, crack or peel. DULUX, because of its smooth, porcelain-like surface, stays cleaner. It is not affected by sweating caused by high humidity on walls and ceilings. It is already setting completely new standards of economy in many plants because it makes repaintings few and far between.

Send in the coupon below for full information about how you can get better paint protection for less money.



DU PONT **DULUX** MILL WHITE
REG. U.S. PAT. OFF.
Starts Whiter—Stays Whiter

E. I. du Pont de Nemours & Co., Inc.
Finishes Division, Wilmington, Delaware

Please see that I get complete information about DULUX Mill White—and your new booklet.

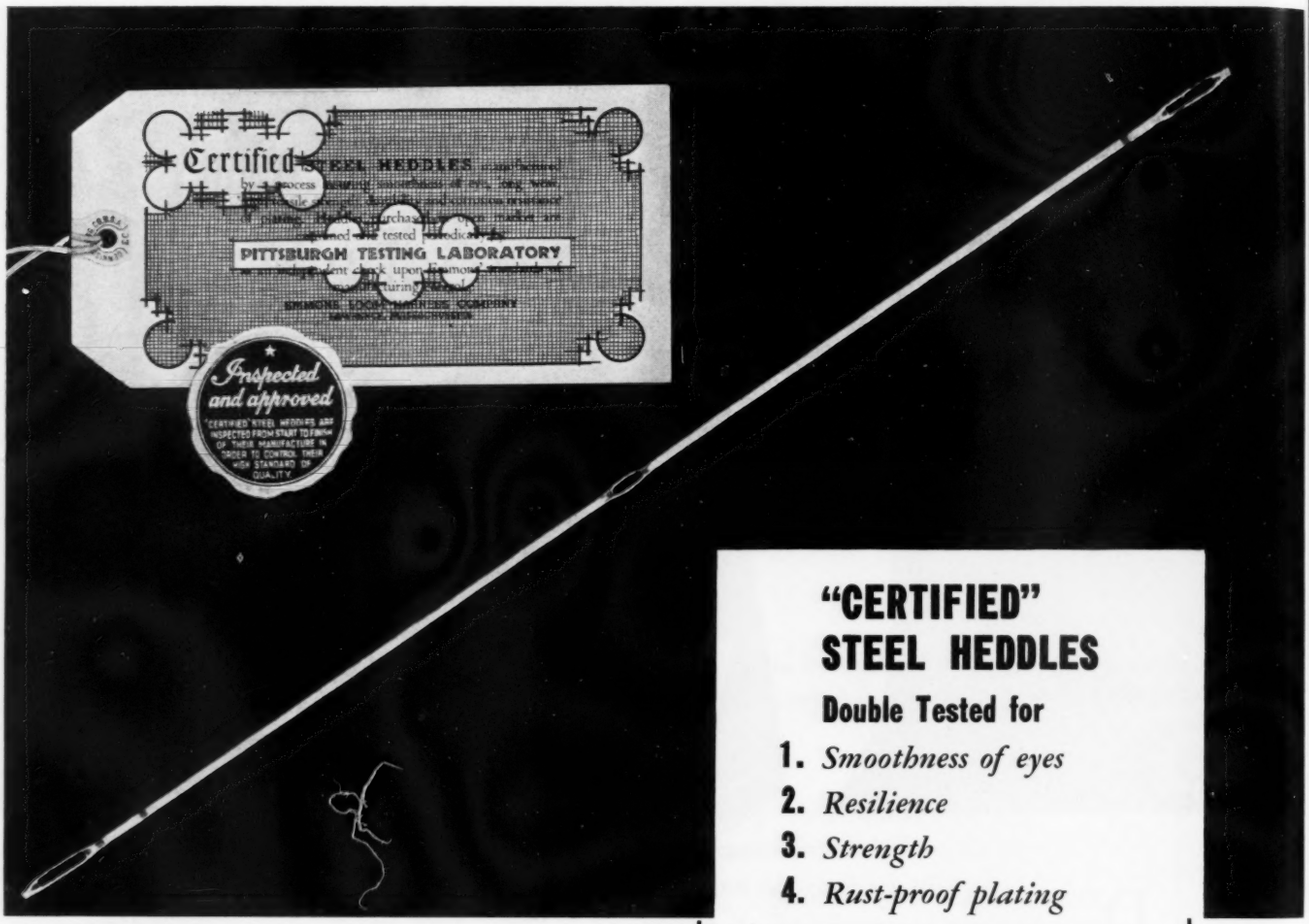
Name.....

Address.....

City.....State.....

To help you eliminate weaving worries

Emmons builds EXTRA features



"CERTIFIED" STEEL HEDDLES

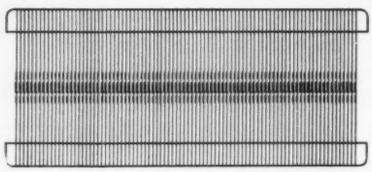
Double Tested for

1. *Smoothness of eyes*
2. *Resilience*
3. *Strength*
4. *Rust-proof plating*

These four points give you a long-lived, trouble-free heddle service. Besides our own careful *inside* inspection (attested by the Inspected & Approved Seal) — we double-check with *outside* tests conducted regularly by the Pittsburgh Testing Laboratory. P. T. L. buys Emmons Steel Heddles in the open market — subjects them to four rigorous tests. That's how they (alone among all steel heddles) come to wear the "Certified" tag of *outside* inspection.

SMOOTH, HUMIDITY-PROOF, CHAFELESS CORD COTTON HARNESS

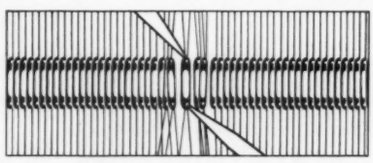
Using only highest-grade, long staple cotton, Emmons Harness is stronger, longer-lasting. *Five* coats of specially-prepared varnish make it humidity-proof. Two-day baking makes it extra-smooth, eliminating fly, improving cover and quality of cloth, increasing loom production.



Used by more mills than any other cotton harness. It costs no more. Large scale production ensures prompt delivery.

MAIL-EYE HARNESS

Lightness of cotton harness — with advantages of steel eyes. For heavy weaves; coarse yarn. Can be used with drawing-in machine. Samples on request.



SELVAGE HARNESS

Either cotton or mail-eye (latter recommended if service is severe). Long staple yarn has high breaking strength. Quickly attached. Insures proper end-guide position. Up to 24" depth.

WARDWELL LOOP AND DOLL PICKERS

No rivets to spoil shuttle point. Complete assortment, all-tape or rawhide face, always ready for instant shipments.

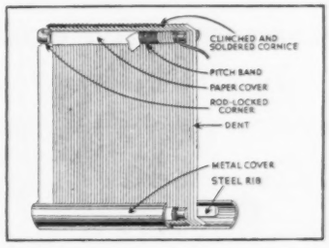
ALSO MENDING EYES; MENDING TWINE

into Loom Equipment

TO lower your weave-room costs, Emmons builds loom equipment with special features that make operation more efficient and equipment life longer. And to safeguard *consistency* of high quality, vigilant inspection constantly checks our output, day by day.

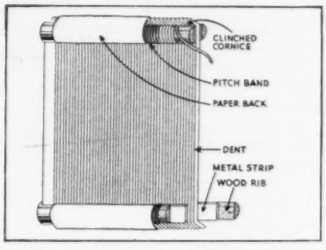
The detailed advantages of the various types of equipment are given below. Look into them. They offer you a three-fold savings opportunity:

1. Fewer loom stops due to broken warp ends, chafing, and equipment failures.
2. Economical longer equipment life.
3. Simplified purchasing, with *one* source from which you can confidently buy many types of equipment.



SEMI-METAL REEDS

Less expensive than an all-metal reed, yet distinctly more efficient than pitch band. Especially well suited to rayon, cotton, duck and worsted, since dents are strong and resilient. Easy to repair — steel-wire ribs, wound with pitchband, curve round end pieces and hold them in place. Dents always even, as they rest against *metal* half-round ribs. Metal back, as on all-metal reeds.



DENTS SPACED ACCURATELY WITHIN 1/100″ — POLISHED SIX SEPARATE TIMES (GOOD KNOTS, SLUBS AND NITS PASS EASILY)—PRECISELY UNIFORM IN THICKNESS. FEWER LOOM STOPS, REJECTS OR SECONDS.

REEDS — FLEXBAC

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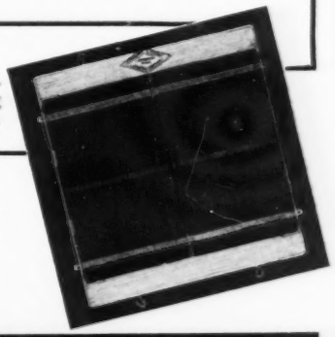

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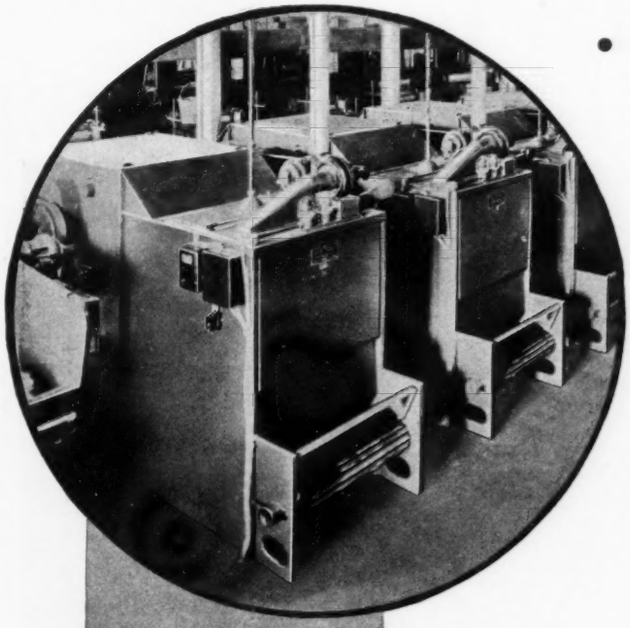

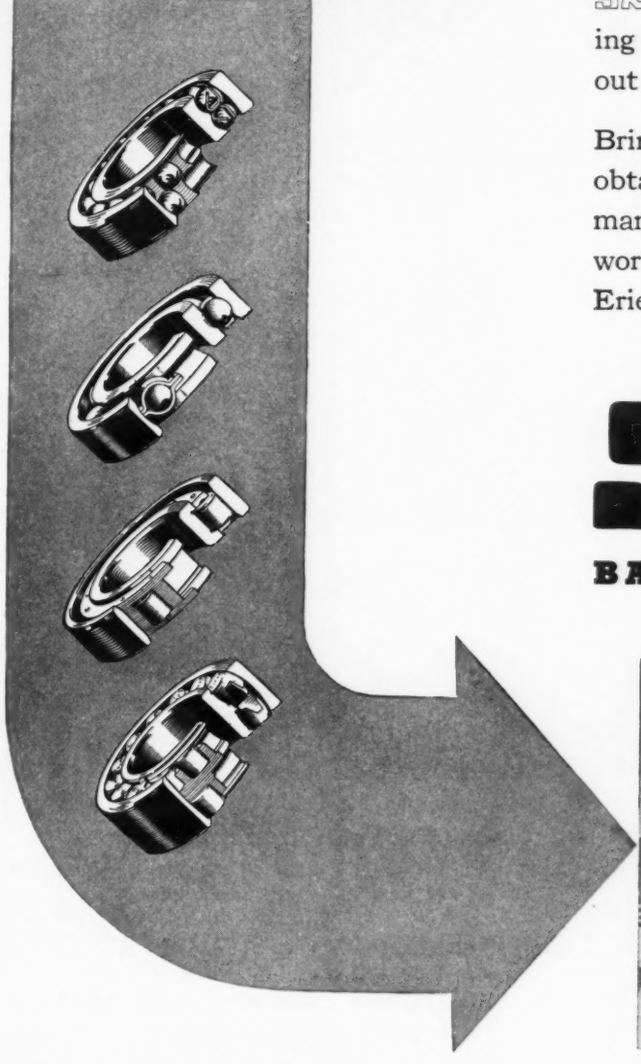

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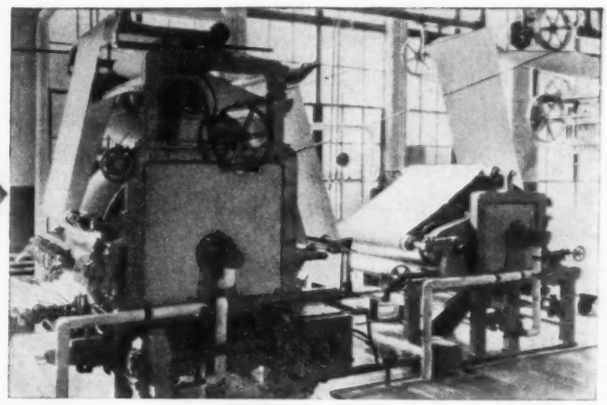

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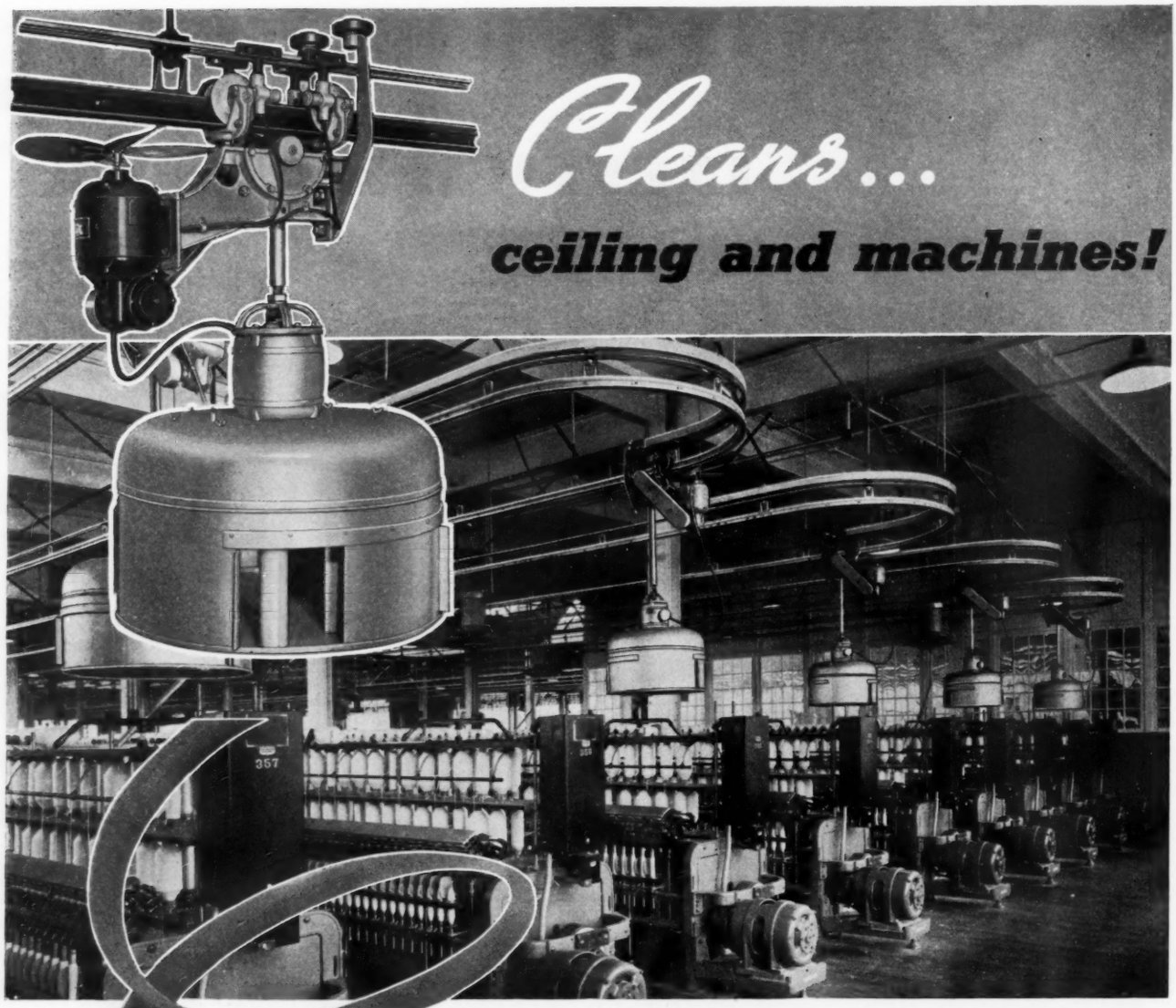

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VOL. 103 — MARCH, 1939 — NO. 3

COTTON
SERVING THE
Textile Industries

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SHORTS AND REMNANTS

Construction News Service

As an additional service to advertisers and their representatives in the textile field, COTTON has for years issued a news service twice a month or oftener with news of new mills, additions and contemplated modernization programs on the part of mills, particularly in the Southern territory. In the last edition for 1938 a suggestion was made that criticisms or comments would be appreciated as to the value of this service.

"Very interesting and it keeps me posted on where to look for new business. . . . I can definitely trace some of our present business back to tips given in this valuable pamphlet," BILL GRIFFIN, Kali Mfg., Co., Atlanta; "This office certainly enjoys the service", R. C. ASHWORTH, JR., Pres., Ashworth Bros., Inc., Fall River, Mass.; "Our organization appreciates this advance news", VASSER WOOLLEY, Seydel-Woolley & Co., Atlanta, Ga.; "Information is quite sufficient and very helpful", R. W. BOEDECKER, Colgate-Palmolive-Peet Co., Jersey City, N. J.; "Helpful to us in keeping abreast of expansions and new construction in the textile industry", W. R. JOYNER, Corn Products Sales Company, Greensboro, N. C.; "Greatly appreciated", H. B. HOBART, Gulf Oil Corp., Pittsburgh, Pa.; "Very Helpful", E. L. METZGER, Keever Starch Co., Columbus, Ohio; "Interesting information and we always read it", EDMUND F. COOK, Batson-Cook Co., Inc., West Point, Ga.; "Look forward to receiving them", R. C. WHITMAN, Rohm & Haas Co., Philadelphia, Pa.; "Valuable in pointing out the activities of the textile industry", E. HAINES GREGG, A. B. Carter, Inc., Gastonia, N. C.; "New form is particularly satisfactory", HOWARD R. HILL, Provident Life & Accident Insurance Co., Chattanooga, Tenn.; "Of great help in our work", NEAL A. MITCHELL, Howard Bros. Manufacturing Co., Worcester, Mass.—so ran some of the comments.

W. S. ANDERSON of Carolina Specialty Co. of Charlotte, N. C. suggested that when we ran the same news in COTTON as had previousiy appeared in the construction news service that we use an asterisk or some other method of indicating that the item was previously used in the bulletin.

BEALE J. FAUCETTE of Scott & Williams, Inc., New York, suggested that we continue to state whether new hosiery mills were to be circular or full-fashioned wherever this information was available.

R. G. ROSS of Barber-Colman Company, Rockford, Ill., says that there seems to be much more information concerning knitting and finishing mills than cotton mills and wants to know is this because of lack of activity among the cotton mills and the opposite with hosiery mills. There has been a marked activity in the construction of new knitting mills in the past year and the wider activity may have overshadowed the modernization news of the cotton mills appearing. We'll try to keep more news of the cotton mills, Mr. Ross.

J. E. LINEBERGER, Pittsburgh Plate Glass Co., Roanoke, Va., would like to get the information just a little earlier if possible.

LESLIE H. ALLEN, Stein, Hall & Co., Inc., New York, says that in spite of our saying that we refrain from "tooting our own horn" that the last page of the December 15th bulletin had more than two columns of such tooting. Hey, Mr. Allen, that last page was a reprint of our own Shorts and Remnants, and this here, suh, is a horn-tooting page.

◆

And speaking of publicity to manufacturers, our compliments go to Link-Belt Company of Chicago, Ill., for their several advertisements published in general magazines interpreting business to the American public—published in the belief that there is more in business than just selling goods entitled "God's Country" and "A Boy—10,000 Years Old" and "After All is Machinery A Good Thing", "Keep the Home Fires Burning". The advertisements offer a picture of the American system and the part machinery has played in developing it. Extra copies of these may be obtained from Link-Belt Company, 307 N. Michigan Ave., Chicago, Ill.

◆

Thinking of machinery, just remember that no one has ever invented a machine or a system that can think. At the risk of treading into Old Timer's territory we believe there has never been as great a demand as there is today for people who can think things through clearly.

◆

"Maybe We Better Print on One Side of the Sheet"

"I am following every article of particular interest to me and it will save me the work of copying the second article on the same page if you can forward these tear sheets to me."

HEINZ SPEIER

Fall River, Mass.

We don't want to double our circulation all at once, but about the only answer to Mr. Speier's problem is to subscribe to another copy at $1.00 per year or $2.00 for 3 years.

◆

Wants Cost Accounting System

"One of our manufacturers in North Carolina today asked us for the best approach to the installation of a simplified departmental cost accounting system for a combed yarn mill. . . . What they are looking for is the names of some companies qualified to advise them on time studies, rate setting, and standards of efficiency."

BERT H. WHITE

Liberty Bank of Buffalo,
Buffalo, N. Y.

Furnishing information to banks on cost accounting seems like carrying coals to Newcastle, but such concerns as Ralph E. Loper & Co., Fall River, Mass., and Greenville, S. C., William H. James & Associates, Hurt Bldg., Atlanta, Ga., and Barnes Textile Associates, 10 High St., Boston, Mass., are doing work of the nature requested through the textile industry.

Which Is Largest Print Works?

"Please advise me where is the largest print works under one plant in the world."

H. HEAP

Some of our informants tell us that Pacific Print Works of Lawrence, Mass., has about 52 print machines and is the largest plant in the world. This statement has been questioned with some people claiming there is one in Russia and possibly one in Italy which are larger. When it comes to yardage, we assume that Rock Hill probably turns out more than any other plant. If anyone knows a larger print works than Pacific or one with more yardage than Rock Hill we'd like to hear about it both for ourselves and Mr. Heap.

◆

Charts Worn After Five Years' Use

"In your June issue for 1933 you carried two charts entitled "Tables of Practice and Results in Spinning Print Cloth Numbers as reported by 23 Southern Mills". After five years of handling my copies of these tables are today badly shopworn and I would appreciate it very much if you could send me 3 sets of these tables."

H. H. ROBBINS

Compania Textilera Ariguanaro,
Bauta, Cuba.

◆

On Raw Stock Dyeing

"One of our customers engaged in the processing of dyed cotton rawstock has asked us for a textbook on the dyeing of rawstock and the subsequent processing and problems involved in processing dyed rawstock."

R. C. BROWN

Export Division,
E. I. DU PONT DE NEMOURS & Co., Inc.,
Wilmington, Del.

◆

Thank You, Mr. Plowden

Since we say so many nice things about other people on this page we are not even blushing when we run the following:

"I have just read your recent issue of 'Shorts and Remnants' and may I say that this is a valuable aid to manufacturers and representatives serving the textile industry and feel sure that it benefits those who receive it."

BELTON C. PLOWDEN

Griffin, Ga.

◆

Lost—One Brother

We hope we can live up to the hope placed in the value of our pages by E. P. Nichols of 1150 South Preston St., Louisville, Ky., who wrote us to place an ad in our pages (probably under Lost and Found) on "To Supt and Bossweaver Bro. W. P. or William Nichols if said party is in your employ please notify him to write me His Bro. E. P. Nichols Louisville, Ky. 1150 So. Preston St."

◆

We'll be seein' you at the Greenville and Philadelphia shows with a big issue—we hope!

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This Slasher Drum is made of ENDURO
It completely resists corrosion and discoloration . . . never spots the warp. Its surface remains smooth and dent free . . . assuring uniform drying. It holds its heat better . . . reflects temperature changes slowly. And it requires no internal bracing to maintain proper strength and rigidity.
This Drum is Not . . .
Being made of less durable metal, it is subject to corrosion and staining . . . frequently causing spotted goods. It occasionally dents . . . preventing uniform drying. It cools rapidly on slight temperature drops. It requires internal bracing (added weight) for proper rigidity and strength.

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*Reg. U. S.-Pat. Off.

ENDURO *Stainless* STEEL

COTTON
SERVING THE
Textile Industries

March, 1939 Vol. 103 No. 3

The Cotton Situation—and What Is Being Done About It?

NEVER BEFORE have mill men realized so completely that the relationship between the raw cotton market and the cotton goods market is close enough to have the well being of one guarantee the good health of the other. The easy flow of cotton goods from mills to distributors depends entirely upon the fluid state of the raw cotton market. Today a review of the situation of mill conditions is actually a review of the raw cotton situation as related to the cotton goods manufacturer.

We are faced with direct symptoms: the largest cotton surplus in the history of the country; an inverted futures market; and paralysis of cotton goods market.

The Government Surplus

11,000,000 bales surplus! Think of that! Nearly as much as an annual crop, over half as much as the largest crop ever harvested. The trouble with us when we look at appalling figures as affecting our own industry is we look at them with eyes strained from WPA and TVA and Rearmament program computations. The mere fact that a figure is relatively out of all proportion to what it should be is very apt not to register with the force it should.

This immense surplus is in the government loan, so they say. Actually the government bought it, for do we not remember the farmers who looked for all the world like they had swallowed the canary when they boasted they had just "sold their crop to the government"? In 99½ per cent of the cases the cotton placed on the loan was placed there never to be redeemed by the grower. And what has it done? It has inverted the futures market so that near months sell high and future months sell low. It has put brokerage houses out of business all over the country, for there is no reason for a futures broker to run a wire and quotations board under such conditions. The unheard of baleage in the loan has necessitated some sort of change in the cotton futures contract. As it exists now, it is outmoded for the good of the shippers, and while the mill men are not in favor of recommended changes made by the shippers it is, in all fairness to the shippers, necessary for something to be done or they will be put out of business.

Suggested Rules Changes

At a meeting held in New York last month at which representatives of shippers, manufacturers and exchanges were present most of the questions considered ended in a complete deadlock. The points brought out were as follows:

1—Shall the basis of the contract be made $\frac{15}{16}$-inch instead of 7/8-inch with 7/8-inch delivered at full discount? On the vote, the conferees were deadlocked.

2—If basis is changed, shall one-inch be delivered at full differences or at a percentage of the differences? The conferees were deadlocked on this.

3—Shall 29/32, 31/32, and 1-1/32-inch be delivered on contract as such? Conferees were deadlocked.

4—Shall the present method of transferable notices need to settle outstanding contracts be changed by withdrawing the transferable feature and by allowing fewer notice days? This was voted down.

5—Shall a penalty be placed upon cotton in the certified stock after the cotton has been in stock for six months or more? This was unanimously approved. However, the procedure will be the subject of conferences between exchange officials and the Bureau of Agricultural Economics.

6—Shall a restricted number of grades and staples be allowed on any one contract for delivery? This was voted down. This question involved one advanced by some mills that the cotton contract should be for three contiguous grades and staples.

7—This point of the agenda was expunged. It was: Shall the contract have but one delivery point?

8—Shall cotton be delivered free of any charge for high density compressions? The conferees were deadlocked on this proposal.

9—How shall irrigated cotton be handled? The conferees were deadlocked on this question.

The only question upon which the conferees agreed was to penalize certificated stocks after it had been in stock for six months or more.

The principal question of changing the contract from 7/8 to 15/16-inch was not agreed upon, and shippers and the mills voting on opposite sides.

It is really impossible to discuss these points, however, as the statements submitted by shippers and manufacturers have not been released. This causes some criticism as it is felt that the controversy is of such serious nature that unless the briefs are published or made accessible to manufacturers and shippers or other interested parties unfamiliarity with the controversial points may bring about still greater confusion.

The cotton futures market has actually become a battle ground for opposing trade interests as represented by millmen and shippers. Shippers are sellers of cotton futures and the mills have been buyers, with speculators growing fewer and fewer in passing years. The viewpoint of shippers as against speculators has usually prevailed in the past, but in the present disagreement the battle lines are drawn closely between those who by the nature of their business are habitual buyers and those who for the same reason are sellers. A speculator might trade either way in the market but between two trading groups as outlined above a contract fair to both sides becomes of utmost importance.

Just how this can be adjusted to fit the needs of both sides has not even been hinted at. The truth of the matter is that just now feeling is at such a high

pitch between the two factions that nothing would suit either side.

The "Inverted" Market Situation

The inverted cotton market, due to the surplus in the loan, has another drastic and more immediately serious affect upon the cotton mills. The situation has completely paralyzed the normal flow of cotton goods from mill to distributor to consumer. No distributor is willing to buy forward purchases of any amount as he believes, when he looks at the market of his raw cotton and sees the future months lower than the near months, he will find those low quotations on July still there when July rolls around.

As a result, unfinished cotton cloth sales have been lower in the recent past and were substantially less than mill output, according to the Department of Agriculture reports.

Yarn sales have been moderate. Prices for the more active cloth constructions, especially print cloth, have declined, but quotations for most kinds of cloth are unchanged. Dun and Bradstreet has reported that wholesale orders increased early in February with apparel, dry goods, and novelties accounting for the bulk of orders. The Federal Reserve Board's seasonally adjusted index of department store sales was 83 per cent of the 1923-25 average in January against 89 in the two preceding months and 90 in January 1938.

Although actual consumption of cotton by domestic mills has increased somewhat compared to the same period 1938 (August-January 1938-39 estimated at approximately 3,400,000 bales against approximately 3,100,000 bales season before) the mill activity is far from what could be considered normal.

As a result of the alarming situation developing from the tremendous government held surplus many remedies are being offered. The newest of these, and on the face of it the best of them, is the Smith Bill amending the 1938 Agricultural Adjustment Act. This bill is designed to reduce the cotton surplus and to provide for subsidy payments to growers. It would:

1—Make price adjustment payments to farmers, on the day of sale, of up to 5 cents per pound. The actual subsidy would amount to the difference between the average price on the 10 spot markets and 75 per cent parity.

2—Establish a minimum national acreage allotment for cotton at 11 million bales.

3—Transfer to the Federal Surplus Commodities Corp. 1,600,000 bales of cotton from the 1934 crop now held by the Government as collateral for loans. This cotton would be devoted to development of new uses and to donation to needy recipients.

4—Permit these growers who in 1939 will reduce acreage below their allotments to withdraw a comparable amount of cotton from the surpluses held under loans at a cost of 3 cents per pound.

5—Release not exceeding 2,500,000 bales annually of the 1937 and 1938 loan cotton to producers at a price sufficiently below the current market to compensate producers for selling the cotton.

And, on the other hand, possible remedies may be derived from non-governmental acts as shown by the program outlined by the National Cotton Council.

The National Cotton Council

The National Cotton Council in session in Dallas, Texas, the latter part of January with over 200 representatives of the cotton-growing sections of the South, elected Oscar Johnston, lawyer, manager of the world's largest cotton plantation, former director of the AAA Cotton Pool, and now member of the Federal Reserve Bank of St. Louis, as president. Daniel C. Roper, Hartsville, S. C., retired Secretary of Commerce; Lamar Fleming, Houston, Texas, official of Anderson, Clayton & Co.; and Harold Young, Little Rock, Arkansas, were elected vice-presidents.

The array of such prominent names as officers of the Council, and the list of delegates which reads like a Who's Who in southern business, furnishes a background of thought and activity in cotton economics which promises a goal of success for the National Cotton Council never before attained by any other organization formed for the purpose of boosting cotton consumption.

A goal of two million dollars for the Council's work is aimed at, with an immediate war-chest of $240,000. It is interesting to know that the South, the Nation's "Economic Problem Number One," has nearly completed the assessment drive for this fund inaugurated less than two months ago. The money has been obtained by assessment of one cent a bale handled by the five groups in the organization: cotton planters, ginners, warehousemen, shippers, and seed crushers. Other interested parties rushed in and donated what they felt should be their share.

All this goes to show that a bale of cotton still represents money in the South—and that the South has no intention of letting its biggest cash return drift too far toward eradication. With a definite five plank program to:

1—Find proper and greater markets for cotton.
2—Maintain proper research activities for new uses for the staple.
3—Obtain proper legislation.
4—Advertise extensively the known uses of cotton.
5—Increase foreign cotton shipments.

the National Cotton Council is pushing things along with the largest amount of cash money ever pledged or raised for such a purpose. They aren't waiting for the government to help them, and they aren't being stingy with the amount involved. For the first time in many years we have become heartened over a plan to advocate the new uses and better distribution of cotton.

Immediately upon election as president Oscar Johnston started on a South wide tour speaking before state units of the Council in all of the Southern member states. He says industry must stop worrying about who is responsible for the problem and get to work uniting with the Council in an effort to solve the problem. He has given in his talks complete analysis of the present cotton situation but the gist of his talk is always that the Council is fighting to obtain a market for a commodity whose market is down. He stresses that pending legislation which promotes orderly liquidation of government held cotton over a period of five years and a free cotton market is utterly necessary for the salvation of the South. In outlining the Council's plans for furthering the consumption of cotton goods he says it does not intend to divide forces or withdraw support formerly given by shippers to The Cotton-Textile Institute and other industrial organizations which promote any new uses, but that they do intend to work in harmony and cooperation with them for one common cause.

SPINNING ROOM PRACTICE

By Horace L. Pratt

Article 1

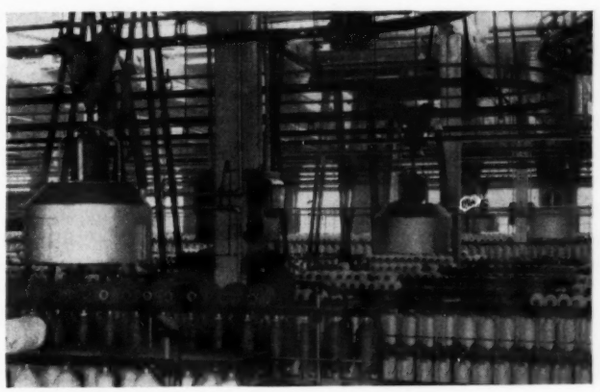
THIS begins a series on fixing, maintenance, and practices in the spinning room. The first article is introductory and comments generally on the spinning room. Following installments will take up each part of the spinning frame, and cover points that should prove helpful to all mill men. A similar series on "Methods of Fixing Looms" by B. H. Hawkins was run in COTTON during 1937 and met with such a favorable response that the articles were reprinted in book form. This series will be of the same nature as applied to spinning. Horace L. Pratt is associated with the Shawmut Mill Division of the West Point Manufacturing Company. He is a regular contributor to COTTON and will be remembered by his excellent studies of "The Basic Yarn Formula", written in collaboration with J. Emery Nash, and appearing recently in this magazine. Comment on this spinning series is invited.—The Editors.

BECAUSE OF THE COMPARATIVE SIMPLICITY of the ring spinning frame many important factors in its operation and care are often neglected. Unlike a loom this machine does not require a number of fine adjustments, settings, and timings, and for this reason considerable mechanical skill is not required on the part of the spinning section man, so those in charge of spinning often make the mistake of thinking that a knowledge of spinning, doffing, and oiling are about the only qualifications that the spinning section man need possess.

This series of articles is being undertaken with several objects in view, among which are: To provide, if possible, a better understanding of this important machine; to show some of the causes of faulty work and possible remedies; and to present the best information available in spinning room practices, especially those having to do with fixing, oiling, cleaning and overhauling. It is our hope to embrace in this series a fairly comprehensive treatise of the problems likely to be encountered in the operation, fixing, overhauling and maintenance of ring spinning frames.

Much of this material will be in the nature of a description of the various parts of the spinning frame and of the functions of these units. It will be impossible, of course, to undertake to describe in detail each make of spinning frame on the market, but we are hoping that our descriptions will be representative.

Because of the almost universal acceptance of spinning frames employing the long draft principles, discussion of the various problems incident to long draft frames will have a large part in these articles. Hand-in-hand with long draft is large-package spinning, calling for larger, heavier, and more rugged frames and adding new problems for the spinner as well as for the manufacturer. We plan to tackle the problems connected with these new types of spinning frames, at the same time having in mind that many mills still have the older frames and that some of them are using old frames that have been rebuilt to incorporate some of the new ideas in spinning. (When referring, in these articles, to problems specifically related to "long-draft" or "large-package" spinning, we will so state. The older frames will be referred to as "conventional" spinning frames.)



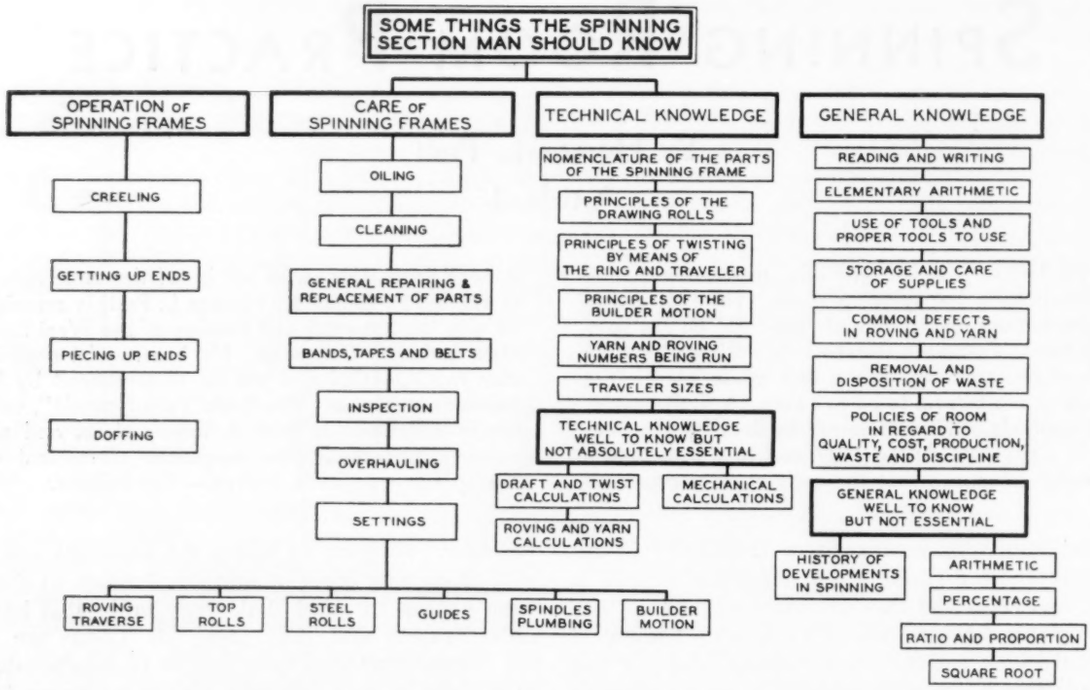
Courtesy American MonoRail Co.

Overhead cleaners in a large spinning room . . .

Trained Operatives Essential

Even with the latest and best in the way of equipment, and with good roving from the card room, the product, the production, the waste, the cost of the spinning department will be little better than the help employed to operate the spinning frames, to repair, to maintain them, and to supervise all this. While we are especially interested, in this series, in the section man, the overhaulers and the supervisors, it is of no less importance that the spinners, the doffers and the oilers be good, reliable, trained help. The spinners, especially, must co-operate by pointing out to the section man rolls, rings, spindles, etc., that show signs of wear or of giving trouble. The section man will need to be a man of some mechanical ability, of course, and will be chosen, also, for his knowledge of spinning and spinning room problems; but in addition to these things he must have the makings of a leader, for the spinning section man is called upon, in a large measure, to supervise all the work on his section, including spinning, doffing, cleaning, and oiling. Some of the points that a spinning section man should know are presented in the graphic chart on the next page.

The overseer of spinning, and this goes for the secondhand as well,



must be a man who can interest himself in details. Some men who seem to be successful claim that they cannot be bothered with small details. Of course as much detail work as possible should be shifted to the shoulders of the secondhand and the section men, but because of the very nature of spinning and the spinning frame, with the multitude of small parts, and with the production made up of many separate threads, it calls for constant attention to small details. The successful spinning room overseer has already discovered this fact for himself.

Spinning Room Must Be Clean

One of the major problems in the spinning room is that of cleanliness. We are very frank to state that so far as we know this problem has never been solved satisfactorily. Let us look for a moment at what is happening in the spinning room. A strand of apparently smooth roving contains many short fibers. In the average spinning room many thousands of the strands of roving will pass between rapidly revolving rolls, here losing many of the short fibers in the form of clearer waste and fly; then through the thread guides and through the travelers and on to the bobbins in the form of yarn.

The travelers, actuated by various forces originating from the spindles, revolve around the rings, on which they are mounted, at a high rate of speed, thus tending to strip the short fibers from the strand of yarn passing through them and throwing the short fibers off into the air in the form of fly. Consequently this fly which is being thrown from the thousands of individual spindles by centrifugal force is constantly settling on everything in the room. Some of this fly settles on the roving in the creel and is drawn gradually with the roving into the rolls, and while some of it may be again thrown off, naturally some will pass on into the yarn. The fly will accumulate on the thread boards, around the necks of the rolls, in the roll stands, in the trumpet guides, on the top and bottom clearers and if not regularly and properly removed may get into the yarn in the form of lumps or gouts.

The main purpose of traveling overhead cleaners, which have been developed in the past few years, is to prevent the accumulation of this fly on the upper parts of the frame, by passing over the frames at regular intervals the blowers, which direct a swirling column of air downwards over the frame thus tending to cause the fly to settle on the lower parts of the frame and on the floor. As the bobbins of roving in the long draft frames turn more slowly than those in the creels of the conventional type frames, thus allowing more time for the fly to accumulate, the traveling, overhead cleaners are especially recommended by the makers for use in connection with long draft frames.

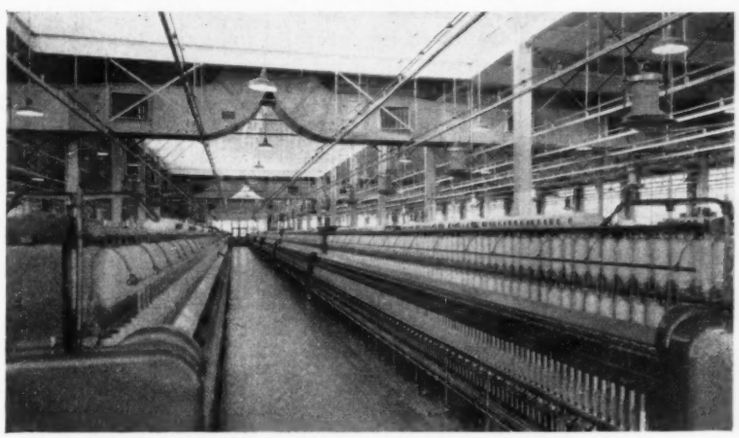
Now back to our original statement that the problem of cleanliness in the spinning room has never been completely solved; we have seen with our present types of spinning frames the process of cleaning must be a continuous one. Vacuum cleaning would undoubtedly be superior to anything that we now have, but the cost of an adequate and satisfactory vacuum system would probably be more than the benefits derived would justify. The next best solution seems to be carefully planned cleaning schedules, which must be followed up by the section men, the secondhand and the overseer. The supervision of this phase of spinning must be constant and conscientious, for herein lies the secret of yarn that is clean and free of gouts. Cleaning schedules will be dealt with in detail in a subsequent article.

Among other objects in proper cleaning of frames are the prevention of accumulation of lint in roll stands, thus preventing wear of the stands and the necks of the rolls, accumulations in gears and bearings and around the ends of roving skewers; also the effect of a clean frame is good on the general morale of the spinning room help. Besides on a clean frame defective parts and faulty settings can be more readily detected.

The importance of using the correct oils for the various moving parts of the spinning frame and the proper application of these oils cannot be over-emphasized and will be discussed at length in a later article. It can be readily seen that as each spindle and set of rolls make up a separate unit for the delivery of each end, it is of utmost importance that these delivery units be properly lubricated to prevent uneven yarn resulting from rolls or spindles dragging because they have not been correctly oiled. A good oiler is a valuable asset to any spinning room, easily saving enough in supplies, oil, and extra production gained to pay his own wages. An oiling schedule, which will be shown in a subsequent article, should be posted, and the overseer and secondhand should see that this schedule is being followed.

Humidity Gives Better Work

The effect of moisture on the spinning of cotton was known long before the reasons for having to introduce moisture into spinning room were known. The absence of moisture in the cotton creates static electricity which causes the fibers to stand apart and to repel each other. This will cause many ends to come down, resulting in spinners getting "stuck up", and in a lot of very bad yarn. Moisture, which is now usually introduced into the spinning room by means of humidifiers, or air conditioning units, causes the fibers to cling together making good, strong yarn.



Courtesy Parks-Cramer Co.

"The ideal condition would be a mill with an adequate air conditioning or humidifying system where it would be possible to control both the factors of humidity and temperature" . .

When mills began to install long draft frames they found that the work would not run as well with as much humidity as was necessary with conventional frames. This may be explained by the fact that with the higher drafts there is greater slippage of the fibers past each other, so the greater the humidity the better the fibers tend to cling together, which in the case of long draft would cause the fibers to come through in bunches, almost like cockled yarn. The range of relative humidity for long draft in various mills is from 50 per cent to 55 per cent, while for conventional frames the relative humidity is from 65 per cent to 70 per cent.

Various methods of humidifying cotton mills have been employed, such as sprinkling the floor around the machines, putting live steam into the room and the like. Later, devices, called humidifiers, were designed for spraying moisture into the air. Still later automatic regulators were introduced for the purpose of keeping the moisture content of the air as even as possible.

In the past few years air conditioning is coming to the forefront. It is of course possible to regulate the humidity better if the temperature can be controlled. The ideal condition would be a mill with an adequate air conditioning or humidifying system where it would be possible to control both the factors of humidity and temperature which so vitally affect the running of the work and the working conditions.

Maintenance of Spinning Frames

Most spinning room men recognize the necessity of an adequate system of overhauling. Even new frames should be checked occasionally to see that they are level and in line. The steel rolls should be scrubbed at regular intervals to clean the flutes, to remove burrs, and to allow the roll stands to be cleaned. It is important that the spindles be kept plumbed. The older frames will doubtless require more replacements than the newer frames but equal care should be exercised in checking and overhauling either new or old frames.

Possibly one would not expect new frames or those just overhauled to make faulty work, yet we know that with the best of care and attention there will be some defects. In preparing the series, however, we have in mind that many mills have old frames and some may have an inadequate system of overhauling.

Following the installation of new frames or a general overhauling is a good time to start a system of inspection, if the mill does not already have such a system. (While we will have more to say on this subject later the reader is urged to read a very fine article along this line appearing on page 92 of the February 1938 issue COTTON.) A good plan is to have a schedule of inspection which will insure that each frame will be inspected once a month. We have found that better results are obtained when the secondhand inspects a certain number of frames on each section, each day, or at least often enough to get around every month, noting the things that need attention, then have the section man take this list and correct the items noted by the secondhand. The secondhand will want to check up later to see that the frame has been put in good shape. Some items such as worn rings, worn roll necks, or cylinders that are dented, bent, or with loose laps may have to wait until the regular period of overhauling. And, by the way, the number of these things that appear on the inspection report each month will help determine when general overhauling is necessary.

It has been the experience of successful spinners that an adequate program of inspection and overhauling will save money for the mill, both in machine parts and in the quality of yarn. For example, several frames with worn rings can ruin many dollars

worth of travelers, besides making a lot of bad, uneven yarn. A bent cylinder can wear out many tapes or bands and at the same time make uneven yarn and lose production while the spindles are stopped for bands or tapes to be put on. Even little things found by the section man and repaired on his regular round of inspection will be found to be profitable. Roving skewers with blunt points or cracked porcelain skewer steps can cause stretched roving. Rolls with rough, grooved or loose cots will cause bad yarn. Ring rails out of alignment will cause tangled yarn. All of these things shoud be looked for and fixed by the section man on his regular tour of inspection.

The section man should exercise care in use of supplies. Only a minimum of supplies should be kept in the fixer's work bench but others should be kept in the main supply room where they can be issued as needed. Section men should be urged to keep their work benches and tool boxes clean and orderly, and separate drawers or compartments should be provided for the various items necessary to be kept on hand, such as rolls, travelers, separator blades, roving skewers, bands or tapes, etc. The proper care of and judicial use of supplies should result in considerable savings over a period of time. At the time this is written prices of certain spinning room supplies are being figured about like this: Rings, 55 cents each; spindles and bases complete, $1.57 to $2.15 each; travelers 40 cents to $2.37 per thousand; cams $3.25. While none of these items is very expensive yet when it is considered that with the exception of the cams many thousands of rings, travelers and the other parts are in constant use in the spinning room, the live, wide-awake section man can save many dollars for his mill in the careful use of supplies.

A spinning frame with 204 spindles has 204 production units, each with its own set of rolls; roving trumpet guide, roving skewers, thread guide, separators, traveler, ring, spindle, bolster, base and band or tape. In connection with the rolls are the cap bars cap bar nebs, clearers, saddles, stirrups, weight levers and weights. Then on the long draft frames there are the extra rolls or belts. Because of the large number of parts to get out of adjustment and to wear out or get loose, the spinning frame may be the source of much uneven yarn, ends down, etc. Constant attention to the condition of rolls, spindles, rings and the many other small parts of the spinning frame is necessary to keep bad work to a minimum.

All of the bad work that comes through the spinning frame is by no means made on the spinning frame. Many of the spinning room's troubles are inherited from the opening, picking and carding departments. Of course the spinners will be trained to watch for and take out singlings, doublings, dabs or slugs and oil or grease. Some mills find it profitable to pay the spinners a small amount for certain of these defects that are caught and held for the attention of the section man or the secondhand.

Should one undertake to enumerate all of the things necessary to be done in the card room and in the opening and picking, to insure good, even yarn, free from defects, a book would have to be written, possibly more than one. And so far no one has been able to operate these departments in such a way as to make perfect roving. But with reasonable diligence in the preparatory departments very good roving can be made.

Precautions should be taken to see that the cotton is properly opened, cleaned and blended for the purpose for which the yarn is intended. Special attention should be given to the pickers, seeing that the eveners are working correctly, checking the beaters, the setting of the feed rolls to the beaters, grid bars, cages, screens, air currents, calender rolls, lap racks, measuring motion, etc.

The cards should be kept sharp and properly set. The clothing should be in good condition. Stripping should be followed up carefully for much uneven work may result when the sliver is not started properly after stripping.

The items to be watched on the drawing frames, the slubbers, the intermediates and fine frames are too numerous to be mentioned in the space available, but will include roll settings, draft and twist gears, eveners, coiler heads, spindles, flyers and builder motions.

Special attention should be given to cleaning in these departments. Machines should be covered when blowing down overhead, and all lint picked off before starting. This precaution will prevent a lot of slugs or dabs. Machine tenders should be checked frequently to see that no long piecings are being made.

Other defects that cause much trouble and should be eliminated as much, as possible are cut roving stretched roving, mixed roving, soft bobbins, tangled bobbins and the like. It is necessary that a spirit of co-operation exist between the carding and the spinning departments if the best results are to be achieved.

(The second article in this series will appear in an early issue. Save your copies of the magazine so you will have all articles.—The Editors.)

Piedmont Section, AATCC Meets in Greenville, S. C.

The winter meeting of the Piedmont section of the American Association of Textile Chemists and Colorists was held at the Poinsett Hotel, Greenville, S. C., on Saturday, February 11. The technical sessions were held in the afternoon, there being one session on piece goods, etc., and a simultaneous meeting on hosiery dyeing and finishing problems. In the former group, B. R. Andrews, of Andrews & Goodrich, Inc., discussed "Tomorrow's Dryers", and Normal S. Cassel, of the Aridye Corp., discussed "Printing with Pigments"—both addresses being of special and timely interest and provoking considerable interested discussion. The round-table discussion on hosiery dyeing and finishing problems, held for the benefit of hosiery men not directly interested in the other forum, was in charge of Jess R. McAteer, of Hatch Full-Fashioned Hosiery Mills, L. M. Boyd, of Scholler Bros., Inc., and Fred E. Sprock, of Geigy Co., Inc.

The banquet on Saturday evening, with A. Henry Gaede as toastmaster, was featured by an address on "Recent Organic Chemical Developments", by Dr. M. A. Dahlen, of the research laboratory of E. I. Du Pont de Nemours & Co. C. Norris Rabold, of Union Bleachery, Greenville, was in charge of the arrangements for the meeting.

Safety Conference Held at Columbus

By Frazer Patterson*

THE TEXTILE MILLS of Columbus, Georgia, and surrounding Georgia and Alabama towns participated in a safety conference in Columbus on Friday, January 27, the meeting lasting the entire afternoon and being followed by a dinner and short business session that night. Well over 400 textile executives and the key men from their plants discussed methods of preventing accidents, investigating near and actual accidents, and educating the operatives to make them safety conscious.

The members of the conference were welcomed by D. A. Turner, president of Columbus Manufacturing Company, Eagle & Phenix Mills, and Bradley Manufacturing Company, who pointed out that in considering men for an executive job, he would select the one interested in safety prevention in preference to a man only "luke-warm" toward safety. He considers the humanitarian side of accident prevention far more important than the monetary value derived.

Paul K. McKenney, president, Swift Manufacturing Company, Columbus, served as general chairman and conducted the meeting by calling on those who had been assigned specific topics in advance, and having extemporaneous discussions from the other members of the conference.

The first topic was on the method of investigating accidents after they occur, investigation of near accidents, and procedure for caring for injured persons. Mr. McKenney sounded the keynote of the meeting when he ended his introductory remarks to the effect that "it is up to us to show our people what is right as regards safety." John P. Harrison, assistant superintendent, Muscogee Manufacturing Company, Columbus, advised that when a person is injured in the plant, he is first sent to the first aid room and if the injury requires medical treatment he is sent to the doctor. All accidents are investigated thoroughly by the superintendent, the assistant superintendent, and the overseers, the latter sending in a report of the accident, which is filed for record.

At the Swift Manufacturing Company, reported Marvin Mims, the foregoing named executives investigate all accidents and the injured person is questioned to determine how the accident occurred, and his opinion is requested as to whether the accident could have been prevented; that is, was it carelessness on the part of the injured party or an improperly designed working condition. The superintendent, overseers, and nurse go to the scene of the accident and investigate thoroughly as to cause and how precautions may be taken in the future to prevent repetition of accidents at that place. As a final check-up, the insurance company is consulted as to prevention of *similar* accidents. Near accidents are investigated only when the employee reports to the overseer or nurse. The first aid council, composed of representatives of all departments, meets twice a month and discusses all accidents and how they should be handled. Newly hired persons are instructed by both the secondhand and the overseer where the first aid room is located and told that he must report all injuries regardless of how or when they happen. The party is instructed previously where he may obtain first aid if the accident occurs during the absence of the nurse.

The West Point (Ga.) Manufacturing Company also keeps a card record of the accident with all particulars for future reference; witnesses to the accident are questioned and a bulletin notice giving the name of the injured, when and how the accident occurred, and what the injured will lose is posted. Jett Potts of this company pointed out that it is well to let all the operatives know that the management is interested in their welfare and that their co-operation is appreciated. No one is permitted to return to work after an accident without a doctor's certificate. The company does not attempt to make good records for lost time accidents, but prefers that the injured remain from work until fully recovered.

Many of the men reporting for the textile mills have routines of like nature for handling accidents, and in order to prevent repetition, only differences and additions to routine are reported. Speaking for the Eagle & Phenix Mills, Columbus, T. J. Culpepper said that the secondhand or some reliable person in the department is responsible for giving first aid and then the injured is sent to the central first aid station. No matter how small the accident may appear, all persons are instructed to report to the secondhand, who applies a bandage to prevent infection of the wound.

When a person is hired at the Stark Mills of the U. S. Rubber Company, Inc., Hogansville, Ga., he is instructed on safety through a letter handed him by his overseer. Later a safety committee with members from both shifts goes to the new employee and asks him to sign a safety pledge card, pledging to report accidents as they occur and to help his fellow worker in any possible manner. W. C. Hayes of the Stark Mills brought out that a newly hired person is reticent about reporting accidents as he wishes to make a good impression, but a visit from the safety committee tell-

*Mr. Patterson is insurance manager and safety director of the W. C. Bradley Company; Eagle & Phenix Mills; Columbus Manufacturing Company; and Bradley Manufacturing Company, Columbus, Ga.

ing him about the man that lost a finger by not reporting a trivial accident usually gets good results.

J. L. Byers of the Avondale Mills of Alabama advised that it is the policy of that group of plants to have the superintendent investigate all accidents and not leave the question of safety up to anyone else.

Columbus Manufacturing Company encourages its employees to report accidents by laying the operative off, if he is injured and has a doctor's bill, for just as many days as he failed to report the accident. Cases of pure carelessness are subject to dismissal.

Determines Mental Condition of Injured

A. C. Henderson of the Georgia Power Company in telling of the company's system for investigating accidents, said that besides the regular service record with complete information concerning the injured, an attempt is made to determine the conditions prior to the accident and the injured's mental condition (whether he was worrying over some personal matter, etc.) The case is written up and over 300 executives have the opportunity of reviewing it. In the case of fatal accidents the safety committee is appointed, consisting of three or four persons, from members of the general office, outside of the injured's division, and one of the employees from the injured's division. One man is appointed from a department that is not familiar with operating routine of the injured. In investigating the accident the committee is to be impartial to both company and employee, and no attempt is made to "white-wash" a case and come to no conclusion. If there has been an oversight on the part of the company it is recorded.

Who Would YOU Hire?
IF YOU WERE BOSS~
MY NAME'S HOMER BLOOEY—I THINK THIS SAFETY TALK'S A LOTTA HOOEY
MY NAME'S WILBUR GAY—I PRACTICE SAFETY EVERY DAY
THE SAFE WORKER-OR THE ONE WHO IS ALWAYS GETTING HURT ON THE JOB?

Falls of Workers

R. L. Clark, master mechanic, Archer Hosiery Mill, Columbus, was in charge of the discussion pertaining to workers injured by falls, and he brought out that all ladders are purchased and not made at the mill, and they are heavy enough to take care of the work that must be done on them. Also, things are not permitted to accumulate on the stairways.

From one-third to one-half of falls are caused by wet or oily floors, said A. C. Link of Stark Mills, and these may be minimized by enlisting the aid of the employees to prevent wet and oily floors, and by instructing new employees and having no running in the plant. When the floors are scrubbed at this mill large signs are placed at the wet place. All scrubbing is done by small sections and these are mopped immediately upon being scrubbed. There is very little trouble with falls from quills, machine parts, and bobbins on the floors as the employees keep them picked up and bottles are placed in boxes located conveniently. All scaffolding is inspected by a committee to see that it is safe. On the subject of bottles, Homer Carter, agent, Pepperell Manufacturing Company, Opelika, Ala., said that cases strapped to the posts make excellent containers. The scrubbing is done mostly on the third shift or when the machinery is not in operation.

George Sessions, Martha Mills, Silvertown, Ga., added that the secondhands inspect the ladders each week and have repaired those needing it. O'Neil Walker, Muscogee Manufacturing Company, said that each department is limited to the number of ladders and each one is kept in a rack when not in use. The ladders are inspected by a committee for safety.

Operatives Must Wear Good Shoes

Many of the mills are campaigning for the employees to wear suitable work shoes and in good condition. Stark Mills sell safety shoes to the operatives at cost. Muscogee Manufacturing Company has a regular inspection of shoes for fitness throughout the entire plant, and the women are encouraged to discontinue the use of high heels.

An important factor in safety is keeping the employees safety conscious. Discussion on this was led by E. A. Feimster, superintendent of finishing at Eagle and Phenix Mills. Systems given to promote and maintain safety programs at several mills follow:

Martha Mills, reported by W. H. Gibson, Jr., superintendent: Safety committee composed of 40 to 50 members meets each month. Smaller committees appointed to inspect the entire plant and report on conditions; report read at safety meetings. Accidents are figured against each department as to man-hours. Department having best score for year is awarded silver plaque and group picture of department is published in mill paper. Children in local schools requested to write paper on causes of accidents in textile mill. They may get information from any source, usually from parents, who are in turn made safety conscious.

Eagle & Phenix Mills, reported by E. E. Hill: Do not give impression of lack of interest in safety by being late in safety items. Try to understand workers. Do not ignore employees offering safety suggestions. Keep safety meetings interesting with real safety ideas. Put into practice things discussed at meeting. Make good use of bulletin boards to stimulate interest in safety. A contest is conducted entitled "white elephant". A white elephant stands about 5½ feet high and mounted on a roll truck. The department having the most lost time accidents for the month

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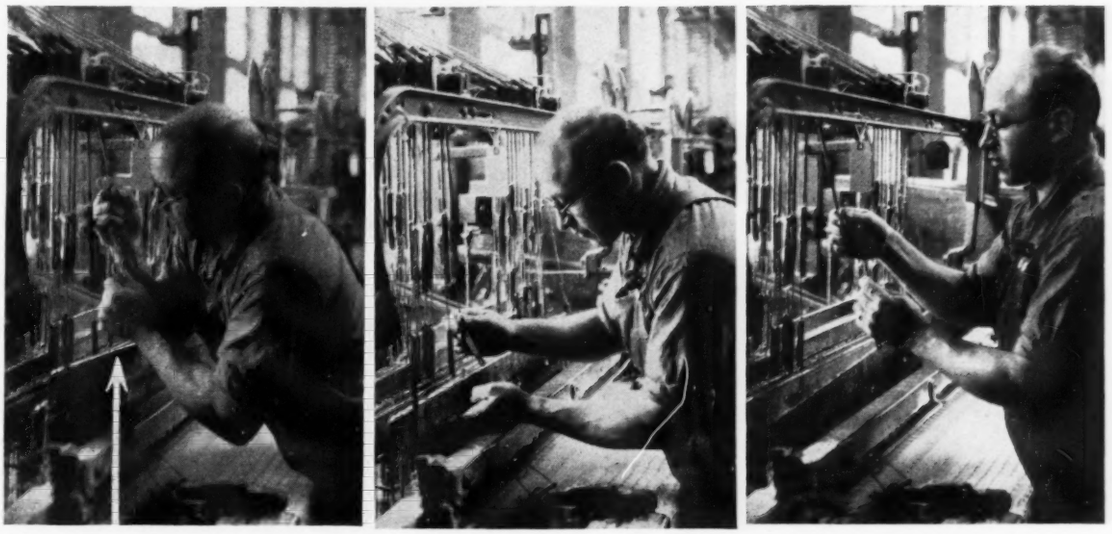
The cartoons in this column and the foregoing page were drawn by W. R. Snell, who is employed in the cloth room of the Langdale Mill Division of the West Point Manufacturing Company, Langdale, Ala. His talent is used in safety work throughout the plant. L. D. O'Steen does similar cartoon work at Tallassee (Ala.) Mills, where he is employed. One of his bulletin board cartoons is used in the adjoining column on this page.



An impressive method for instilling safety habits in the operatives is the use of actual photographs showing the right and wrong method of performing some special function in textile mill operations. In the above photos: at the left is shown the wrong way to adjust the harness on a loom. The tension is on the harness and a slip of the hand may cause this man to lose an eye or severely injure his hand. The center and right photos show the correct method for making the harness adjustment: simply release the tension (center) and then make the adjustment as shown at right. Photos courtesy National Safety Council . . . . . .

must keep the elephant until the next month.

West Point Manufacturing Company, Langdale (Ala.) Plant, reported by Erwin Lehmann: Has cartoonist at mill. As soon as he hears of an accident he draws his version of it with the name of the person thereon; posted on bulletin board. When accident is caused by carelessness, usually pictures person as trying to do some "Tarzan" stunt.

Swift Manufacturing Company, reported by Jack McLeod: New posters placed in each department each week. Nurse goes through each department of mill every week.

Columbus Manufacturing Company, reported by John Wall: Suggestion system for all employees. Keep department records and have contests and prizes. Overseers should lead employees in safety question and not drive them. A large bulletin board is set up to represent a thermometer. The red in the thermometer represents the number of man hours the mill has gone without a lost time accident. There are also marked on the sides places showing where the thermometer has gone in the past without a lost time accident. The longest time on record was 4,030,000 man-hours.

Muscogee Manufacturing Company, reported by C. L. Hall: Safety program based on basic principles of safety that have been scientifically worked out. Principles carried to workers by supervisors and not through safety contests. Does not believe "ballyhoo" creates lasting impression on employees. Supervisors work in safety instructions when talking to operatives about regular work.

Conducting Safety Meetings

The next topic under discussion was the method of conducting safety meetings, led by Henry Robinson, superintendent, Columbus Manufacturing Co.

Eagle & Phenix Mills, reported by Frank B. Bradley, vice-president and general manager: Meeting of general safety committee on two Wednesdays in each month. Chairman and secretary compile all records and get minutes written for meeting. Special topic is discussed and each member contributes to subject. Meetings as spirited as possible. Safety should begin with the top executives and go down, or otherwise it *will* go down. Split committee into sections and create spirit of rivalry. Departmental safety committees have 106 members. Membership rotated monthly.

Martha Mills, reported by T. R. Scott: Safety committee composed of all supervisors, general superintendent, departmental superintendents, overseers and secondhands. Membership is not rotated. Departmental members rotated on plant safety inspection taken each month. Typical safety meeting at this plant: reading of minutes; report of safety inspection committee; discussion of each item separately; discussion of ways and means of eliminating accidents; each accident report discussed and injured meets with committee to explain accident, acting out accident with tool. By having each department inspect another department other than own interest and spirit of rivalry created. Each member called on for his ideas on safety.

Muscogee Manufacturing Company, reported by H. S. Sturkie: Convenience of both time and meeting place; have definite object in mind at each meeting; have some responsible person at each meeting; make each member feel that he has a responsibility; do things and don't have too much talk; get each person's ideas and comment.

The meeting closed with a dinner, at which Hugh M. Comer, vice-president and manager of the Avondale Mills of Alabama, led the discussion on foremanship training, pre-employment examination, recreational activities, and health programs.

Mr. Comer closed the meeting with a bit of humor told in his inimitable manner: "Two men were 'high' on a party. The next morning one of them was bruised and bandaged and demanded of his friend 'what happened?' His friend replied, 'Oh! We had a party last night and you thought you were a bird and could jump out of the second story window and fly to the ground.' 'What?' replied the first man, 'Why didn't you stop me?' 'Stop you,' replied the friend, 'Why, I bet ten dollars you could do it.'"

POOVEY AND JOHNNIE

A "human-interest" mill story in dialogue that contains some very practical information on loom fixing, and break-outs in particular.

REMEMBER these two fellows? Poovey is a practical loom fixer, who has spent his life in the mill; Johnnie is a young textile-school graduate who has just started to "fix looms" in the same mill. They made their first appearance with a discussion of thin places, page 78, March 1937 COTTON.— Copies of that article are available upon request.

Here they cover, mainly, the causes of break-outs. Would you like to have more of their conversation reported? If there is sufficient demand, maybe we can keep them talking, so please tell us whether or not you would like to have the series continued.—THE EDITORS.

POOVEY tightened the lock nut on the pitman arm clamp he was fixing, pulled the shifter handle on, and watched the shuttle box for a few seconds. He casually turned to the loom behind him at the sound of a slight slap of the shuttle and stopped it; there was a mat-up in the warp. His hands being oily, he did not attempt to cut the mat-up out but attracted the weaver's attention with the arching of an eye-brow. Then he walked over toward the water-house, spat in the nearest cuspidor, noted the sign on the post "Cuspidors Are To Be Spit In—Not At", shifted a quid to one side incident to taking a drink of water, remembered it was an old quid anyway, dropped it out, and drank the cool water.

He looked at the flag row on Johnnie's section to see how he was faring and saw only one up and that the flagged loom was still running. Johnnie was standing in a post alley on the spare floor looking attentively at the records of break-outs for each section hung there on a board. Poovey walked over to where Johnnie stood and looked over his shoulder.

"Looks like I had better luck'n you did last week on break-outs, Johnnie," he said apologetically. "Them things happen in spells and sometimes you can't never tell what caused 'em. I believe the speed of these looms changes when the night shift goes on and makes more break-outs at night than during the day."

"Well, on my section something else besides the speed of the loom makes a break-out because I have twice as many as my night man," said Johnnie. "Sometimes, it's true, even the loom I've worked on that morning for break-outs has another one at night. Maybe the night weaver doesn't know how to start up a loom or something—or doesn't know how to stop them off properly and then I have break-outs flagged the first thing in the morning. You don't have many breakouts on your section; when you haven't anything else to do, come over and look around a bit for me and see if you can locate the trouble." He hastened to add, "You know, after we talked about thin places not long ago, I came back and worked on so many looms that my production dropped off a bit, but those thin places have just about stopped. The weaver told me I was stopping off too many looms just to look for things that cause thin places, but I went ahead and finished working on all of them."

"You seen the weaver's pay check every week and so have I," Poovey responded, "and her pay check has been more every week since you fixed them looms 'cause she didn't get docked for as many seconds. I don't care what that weaver says about you stopping off looms—she's making money every time you fix a loom." He added that he most always had something to do because he *knew* he couldn't fix a loom so he had to keep fixin' to keep 'em runnin', but that since he was already over at Johnnie's section he might as well take a peep at some of his looms.

They walked down the weaver's alley on one line until they came to the flagged loom which was still running. "Johnnie, do you let your weaver keep arunnin' a loom after it's done been flagged?" he inquired.

"Sure," Johnnie replied, "I tell her to let them run until I can get around to fixing them. Sometimes I have 5 or 6 looms running, all with flags on them and all out of fix, but if I had them stopped off then she (the weaver) wouldn't be getting paid for production."

"Johnnie, they's times when a loom can be run and be flagged to be fixed too, but I ain't never seen that time. If a loom is out of fix enough to be flagged then it's out of fix enough to be stopped off. You see this'un that's flagged and runnin'. Well, it ain't boxin' right on the battery end—no wonder, the check strap is broke. Now if a weaver was good enough to know that a loom was out of fix but that it would run, then she would be good enough to be a loom fixer. If she knew what was wrong with it she wouldn't let it run, and if she didn't' know what was wrong with it, she ought to stop it off. Watch here, it just changed the bobbin; let's take a look at the shuttle. Wait a minute, don't run off."

"I was only going to get a check strap."

"Well, wait anyhow, if you go get a check strap now you'll want to put it on and by the time you put it on you'll have another flag up and you won't see what I'm talkin' about. This loom changed filling just by the skin of its teeth—it only got one ring of the bobbin caught in the shuttle spring and it came mighty near droppin' the quill and causin' a break-out. That loom oughter been stopped off 'til you got here. Now go get that check strap you been fidgetin' for."

Johnnie returned with the check strap and put it on. The shuttle did not box properly and he began tampering with the box front and binder spring and eccentric pin until he had the shuttle boxing as he wanted it.

"Boy, I'd go crazy if I had to watch you fix looms

more'n 15 minutes. How come you didn't limber up that strap by working it around in your hands for a minute and then you wouldn't have had to open up the box front, bend in on the binder spring, and do whatever else you done when you leaned over that battery and slapped at something with your hammer and screwdriver. And didn't you try to knock that eccentric pin around with your hammer and screwdriver without loosenin' on the nut holdin' the binder in? All in the world you had to do was limber up that strap, put it on, and maybe move that check strap regulator a little. Now what else should you do before leavin' that loom?"

Johnnie thought for a moment or so and then said, "Make it change to see if it's transferring properly." This satisfied Poovey so much that he reached in his pocket for a fresh bite of what looked like a surefire "nauseater" to Johnnie, took a good snap off the end, deliberated as to which of his jowls he would grace with it, and passed the plug to Johnnie, who nibbled it timidly and began expectorating immediately.

The two leaned for a minute against a loom and chewed reflectively, Poovey thinking and Johnnie hoping he would not go away.

"Johnnie," he said casually, "one of the best ways to cut down on bobbin break-outs is to have the shuttle comin' into the box right." Johnnie leaned closer so that nothing said would be lost in the roar of the weave room. "If that shuttle ain't being boxed like it ought to, nothing can make that loom transfer right. That shuttle has got to get across the lay in plenty of time, get in that box all the way, and *stay* there."

"Maybe I'd better put on more power on my looms and then box the shuttle tighter," interspersed Johnnie.

"If you talk like that I'll scream," Poovey replied, and Johnnie thought how strange it would be to have Poovey emit such noises, but Poovey's point was well taken.

"You don't need any more power than usual, you just got to use what you got in the right way. For instance, does it take more power to throw a new shuttle across the loom or to throw an old light shuttle?"

"Why, the lighter the shuttle the less power it takes, of course," Johnnie said without thinking.

"Then why do you take power off when you put in a new shuttle?" responded Poovey. "It takes a whole lot more power on the loom to throw an old shuttle than it does a new one, and when I say that you should use the power that you already have got in the right way, I mean to use your head in fixin' that loom instead of droppin' the power strap.

"Some of the fixers were laughing the other day about you having so much power on one loom that the company was going to have to put screens in the windows to keep your shuttle in that loom from going out the window."

He was amused at his own humor but seeing that Johnnie did not appreciate this bit of leg pulling, he went on:

"Some break-outs are caused by bad quills: these

Photo made at Georgia Tech for COTTON *by Paul Robertson*

Poovey looks on with displeasure at Johnnie's method of boxing the shuttle by bending the binder spring.

are few and far between and it is the battery hand's job to pick them out when fillin' the battery, but what you want to do is to fix looms so that this will be the only cause—then you can jump on the battery hand about bad quills gettin' into the battery.

"Blamin' a lot of break-outs on bad quills is like blamin' a labor agitator for gettin' you into something you had better sense than to join. The loom fixer is the one to stop the break-outs. Some of them sets the transfer too deep and some sets them too shallow. A loom making about 160 picks a minute ought to have a little play, say about ⅛-inch, between the transfer hammer and the rings on the quill, with the loom on front center. If the hammer is down all the way on the quill rings then it might knock that full bobbin right on through the shuttle, not far enough to go all the way out, but enough for the butt of the quill to go on through and leave the nose stickin' up to tear out the top shed. Or it might just leave the bobbin restin' in the shuttle without the rings caught and it will come out in the shed and tear things up somethin' terrible. If the hammer is set too shallow that quill might not catch and it will jump out most anywhere and tear up the warp."

"Poovey, on the fast looms don't you think the transfers should be set higher off the quill than on slow ones?" asked Johnnie.

"Yeah, you know that without askin' it. One day I had a belt get on the flange of the pulley driving the loom and that loom looked like it was makin' nearly 200 picks a minute. The fillin' run out and the loom began to change and the bobbins were knocked all the way through the shuttle—it sounded like a machine gun."

"Where did you ever hear a machine gun?"

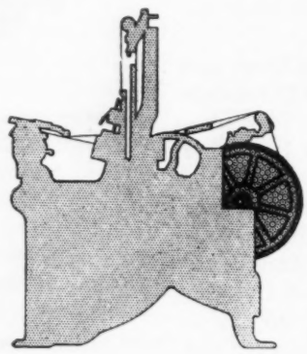
"Don't interrupt me. Where was I? Oh, yeah, I took a look at that transfer and it was kinda high

off the quill anyway, but that loom was goin' so fast that still the full quills were hoppin' right through the shuttle and into the can."

"What about rolling bobbins? That is, where the transfer does not place the bobbin in the center of the shuttle?"

"I'm comin' to that. I can't say everything at one time, can I? The eccentric pin in the sword will help you to center your shuttle so it can take the quill right. But remember, Johnnie, when you move that eccentric pin on the battery end you want to move it on the lever end too. If you don't that lay will not be straight and you will have trouble and you might not ever find out what's wrong. And, again, if that quill don't get in the center of that shuttle, it will make the shuttle split just a whole lot of the time.

"Now talking about the quill gettin' in the center of the shuttle, don't forget that the fork on the nose of the quill has got to get in the center of the shuttle too. When checkin' this, turn the loom over by hand, with the transfer motion workin', and follow that fork all the way down and see that it presses right on that quill nose. Sometimes it will let the nose of the quill jump out and then the quill will try to get in the bobbin sidewise and it can't do it. That fork ain't supposed to touch the quill after it gets into the shuttles, but it is supposed to guide it there. They's some kind of transferrer now that is made of a solid piece and it don't have no fork, but presses on the bobbin from the butt to about half way out. They are good things. I got some of 'em on my job now. But gettin' back to that fork, they can be too deep or too shallow just like the transfer hammer and you've got to adjust them with a wrench by bending them in shape. Here comes the dope man. I gotta have something to drink, I'm gettin' hoarse."



Johnnie bought the drinks and Poovey supplemented his rations with a gingerbread cake. While refreshing himself Poovey attempted to describe how a battery out of line could cause a bobbin break-out and explained that the battery should be set properly on the loom with gauges and not according to eye. Then when the battery has been gauged it should be fixed there with dowel pins. "Not everybody can use a set of gauges to line up a hopper stand. We have the head fixer do that here, so if one of yours is knocked off and you have to have a new one, go get Tom and he will put it on and line it up for you.

"This little thing here," he said pointing to the springbolt, "is adjustable by these little washers and if the spring is too strong or too weak it may cause trouble. And the support may wear in time and get grooves in it where the rings rest against it. When it gets like that you should change it, but be careful in puttin' it on that you don't bust it by tightenin' it so much. Some times the bolt or the hole in the support gets so worn that it slips all over the place and then it will let a bobbin down wrong."

Johnnie had been listening a long time and said, "I've found that this little thing under the nose of the quill, which supports it from the bottom, will make a break-out if the spring is too weak—or if it is too strong. I just keep adjusting it until I think it has the proper amount of spring on it and then I let it go."

"That's called a 'top holder' and it goes on the bottom so I don't know why it's named that, but you certainly have to have the necessary tension on it. I suppose practice will tell you just how much. It's like grading cotton, folks can't tell you so much about it but you just have to keep workin' with it 'til you learn. That top holder has got to be set close to the bobbin too. I've seen break-outs caused by it bein' too high and some caused by it being too low. You'll learn about settin' them. I saw a fellow try to take one of them off one day without stoppin' off the loom and he let it get down too far and it hit the shuttle when the lay came forward and broke the top holder, busted the shuttle, and made a break-out. It nearly scared him to death too."

"I found a break-out caused by the nut and bolt that holds the breast-beam and loomside together, just under the battery, coming loose one day and permitting the battery to move out of position," added Johnnie, "so I took my gooseneck 34 wrench and went over the whole job and tightened them all. A good many were loose and I believe it was worth the effort, even though I did break one of them off and had to drop the whip roll to put in a new bolt."

"That was one day's work you'll be glad of some day," replied Poovey, "but right now I want to say that if you ever learn to set up a shuttle feeler right it will be another good day's work. I ain't got time now to take one down and show you how it should be done, but you can always tell when they are set right because you can turn the loom over with your hand and keep moving the shuttle forward out of the box to see if the feeler is protectin' as it ought to. If that shuttle feeler ain't set up right it will cut the shuttle, make break-outs, and do more damage than you ever saw. But remember this, you can always tell *when* it's set right. They've got to be *in* just far enough, *up* just far enough, and have just the right amount of spring on them. They are troublesome sometime, but when they're set as they ought to be, then a whole lot of your break-out trouble is over."

"Let's walk down the line and look around a bit. I can think better when I see something to think about."

On the way down the line Johnnie stooped and picked up a battery shell and spring lying on the floor, "I have several looms running without these little gadgets and they seem to do all right. I wonder why they don't take them off all the looms; it would save the company money."

"That little spring makes sure that the battery

disc will revolve on the change. Without that on there you may have a break-out in one minute or in a week. I reckon you could call that little piece your insurance policy. Sometime when the little spring gets so weak that it won't hold the piece against the gear, the battery won't be turned by the big spring and a bobbin will be just half way over the shuttle when it transfers. You know what'll happen then."

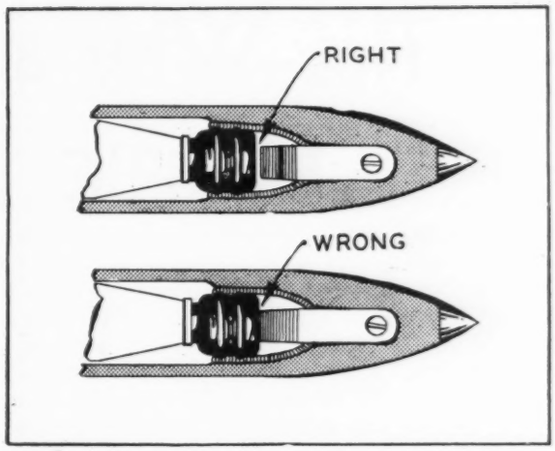
"Poovey, there's one loom on my job that has had a break-out so often I'm always afraid to go around it. I've worked on it just about every day either for break-outs or for hanging bobbins and I don't see anything wrong with it. I've put on all new battery parts, a new picker foot, pick lever, lined it up, and done just about everything I know to do to a loom and still it won't run without hanging bobbins.

"I know what you're going to say—that the shuttle is worn convex and doesn't box the same every time—but that is *not* the trouble. I've set the shuttle feeler up and I know it's working properly and without any limbernecking at all. In fact, I put on a new one. I guess I've worked on that loom for 10 or 12 hours altogether and I'd like for you to diagnose the trouble for me."

"What was that word you used, 'diag—something'; I can't do that but I'll try to tell you what's wrong with it?"

Johnnie triumphantly led the way to the loom and with a mischievous look in his eye watched Poovey. Poovey's eye followed the shuttle for about 6 picks, took in the new parts Johnnie had put on the loom, and stopped the loom off with the shuttle in the lever end. He held the shuttle up to the light, removed the quill, tapped the shuttle spring slide farther into the recess with his hammer, tightened the screw in the shuttle, and started the loom.

"Johnnie," he said, "if you've done all the things you say to this loom, it ain't going to give you no more trouble." Stopping the loom again and pulling the shuttle out of the box, Poovey showed Johnnie that there had been no clearance between the slide upon which the base of the quill moves into the shuttle spring, and the base of the quill after it is



Poovey's method for setting the shuttle spring . . . . . .

in the shuttle spring. There must be a small space at this point, about the thickness of a dime, Poovey explained, and if there is no space there the chances are that the quill rings will not catch in the grooves in the spring.

"It ain't always the man's fault when he's sick, Johnnie, sometimes it's the water he's drinkin'," said philosopher Poovey.

Seeing that his interview with Poovey was just about over and endeavoring to continue it, Johnnie told Poovey that he had failed to mention such things as high bunters, high transfer latches, and the like as causes of bobbin break-outs.

"Naw, I didn't mention them things, or that worn parts, loose crank shaft bearings, loose pitman arms, and worn rocker bearings would cause them too—because I thought that even that sweeper comin' yonder knew that."

Poovey wandered back to his job, chewing meditatively, and wondering what Johnnie took him for—not mentioning those other things—but he made a mental note to inspect one of his looms to see just what a "high bunter" would do.

April Will Be Textile Convention and Exposition Month

April will be the month of conventions and expositions for the textile industry. First, chronologically, is the 13th Southern Textile Exposition, in Greenville, S. C., running from April 3 to 8 inclusive.

The following week will bring the annual convention of the American Cotton Manufacturers Association at the Roosevelt Hotel, New Orleans, La., on April 13, 14 and 15.

The third week of the month, April 17-21, will be occupied by the Knitting Arts Exhibition and the convention of its sponsors, the National Association of Hosiery Manufacturers and of other knitting organizations, at Commercial Museum, Philadelphia, Pa.

Other textile associations will hold divisional and sectional meetings. The national convention of Phi Psi textile fraternity comes at the Biltmore Hotel. Atlanta, Ga., on March 31-April 1.

The two major expositions of the industry, at Greenville and Philadelphia, will be larger and better than ever. Hours at the Philadelphia show remain as usual. The schedule of the Greenville show has been changed; show hours will be from 9:30 A. M. to 9:00 P. M. on Tuesday, Wednesday, Thursday and Friday; from 11:00 A. M. to 9:00 P. M. on Monday; and from 9:00 A. M. to 4:00 P. M. on Saturday.

COTTON'S representatives will occupy Booth 408 at Greenville, and Booths 467-468 at the knitting show in Philadelphia and the staff cordially welcomes the friends of the magazine and its publishers to call by these booths for a visit.

The Why and Wherefore FABRIC DESIGNING

By T. O. Ott, Jr.

(Article 7)

Drawing-In Draft

THIS is the seventh installment of a series on designing written especially for COTTON by Mr. Ott. The series covers the fundamental principles of designing and in no way attempts to release specialty fabrics for production purposes. This article takes up the drawing-in draft . . . . .

GENERALLY THE STUDY of the various fundamentals should involve a thorough grounding in the characteristics of the drawing-in-draft. Few students or beginners realize the value of this branch of designing since so much emphasis is usually put on the design, leaving the drawing-in-draft to develop as a result. Much dexterity will be developed in composing designs by the student taking a drawing-in-draft and chain draft and working out a design to fit. By making various changes in the draft new compositions can be evolved that are interesting and instructive. Where the loom harness capacity is limited to from four to six harness this method of evolving designs is very useful.

Of course, it will generally be found to be cheaper to maintain as few drawing-in-drafts as possible and to vary the chain draft to get the new pattern. However this method has the limitation of giving the designer a limited control of the ends which may result in much sameness and duplication. The possibilities of chain draft variation will be discussed fully in a later article.

Types of Drafting Generally Encountered

If the designer will look over a number of his old designs he is sure to see that a good many have drawin drafts with similar characteristics. In fact they are so similar that they may be given a general classification which for our study here is very desirable. For our purpose we will take up most of the types usually encountered in dobby designing and study some of the variations and possibilities of each type.

The straight draw is, of course, most common in all types of weaving, plain and fancy. This type of draw indicated in Fig. 1 has the chief disadvantage of limiting the weave effect to a very few ends. Say we have a loom drawn in on 16 harness straight draw on a warp with 60 ends to the inch, our pattern is then limited to approximately ¼-inch before it must repeat on itself. This will do very well for small all-over effect twills and warp and filling stripes but for distinctive designs and pattern effects this type of draft on a dobby loom holds little promise. Large harness capacities of 20 to 25 offer some possibilities and special constructions such as a 2-beam fabric using the top beam on as many harness as possible. Reduction of the sley of the goods to the fewest possible ends per inch will also give the designer a chance to give more variety to the design effect. On box looms some variations can be introduced by using extra filling effects but on the whole the straight draw is very limited.

The point draw is next in line of analysis, being illustrated in Fig. 2. It is characterized by the draw running in one direction for the capacity of the harness then reversing and running in the opposite direction for the capacity of the harness, less one since the point must be distinct. *In starting a point draw on number one harness and drawing to a point on say number sixteen then returning to another point at number one care must be exercised to end the repeat on number two on the return in order to avoid a flat by placing two ends together on the same harness.*

Here the designer has the advantage of increasing the size of the design to twice the width of the original pattern by reversing the draft on itself. This may be desirable in a good many instances where herringbone and diamond effects are in order. Blocked effects may also be obtained on this type of draw. Figs. 3 and 4 illustrate two types of effects that may be obtained from this draw.

Combination straight and point draw as the name indicates makes use of a combination of the straight and the point draw to give width and change to the design. This basic draft is shown in Fig. 5. Other variations of the straight and the point draw will be taken up as distinct types in order to fix them in the student's mind. The chief object in combining the straight draw with the point draw is to obtain greater width of pattern on each side of the point. This is particularly desirable for wide wale herringbones, stripes, and checks that are usually developed from these drafts. Very little may be developed on such drafts that are not characteristically dobby in appearance.

The skip draw offers greater variety to the designer where it is desired to obtain more variety on a few harness. This draw is obtained by drawing straight for a definite number of harness then taking up the draw several harness ahead then utilizing the skipped harness in some definite order. To illustrate we rearrange a straight 12 harness draw, as follows: Take harness 1 and 2, skip 3 and 4 and use 7 and 8 then use 3 and 4, skip 9 and 10, take 11 and 12 and use 9 and 10. Thus the skip draft is made to yield interest even

The first article in the series appeared on page 56 of the January 1938 issue; subsequent installments appeared on page 64 March, page 55 June, page 55 July, page 65 September 1938 issues, and page 62 January 1939 issue.

when using a simple 12 harness twill chain draft. Skip twills and broken twills have this type of draw as a rule although they may sometimes be drawn on the straight draw. The complete skip draw and design is illustrated in Fig. 6.

The irregular draw may constitute a random distribution of the harness over the capacity of the harness used. Considerable ingenuity may here be exercised in composing an irregular draw because the harness must be distributed in such a way as to give a pleasing effect to the design. In explaining such a draft it will be best to develop the draft, select a chain draft, then paint in the resulting design lightly. Then various harness may be changed in order to give unity and balance to the design and avoid any interlacing that may be considered a defect. To begin with say that we have a 16-harness dobby to exploit in making a design; we may decide to put in the harness in an order such as: take one harness for two ends, take number two for one end, number three for one end, number four for three ends, number five for three ends, number six for one end, number seven for two ends, number eight for one end, number nine for three ends, number ten for two ends, number eleven for two ends, number twelve for one end, number thirteen for three ends, number fourteen for one end, number fifteen for three ends, number sixteen for one end. The resulting drawing draft is shown in Fig. 7. The development of the design from the chain draft selected is shown in Fig. 7 also.

The irregular skip draw offers possibilities to the designer in that he may use considerable preference in the selection of the harness as well as the number of ends that may be drawn to a harness. Here an order of drawing the ends will be selected at random as in the previous example but in addition a skip may be made to another harness other than the next in order. Such drafts are often developed for curved twills in order to obtain sweeping or waving lines to the twill line. Taking such a draft to develop we may often obtain unusual effects when the design is finally evolved. Using the same draw and other chain drafts give other pleasing results. Fig. 8 shows the resulting draft developed and the design resulting from the combination of the draw and the chain draft selected.

The compound draw is evolved by taking two drafts and combining them in some order. This type of draft is adaptable to the development of large pattern figures resembling the figures sometimes obtainable on Jacquard machines with large harness capacity. Generally it requires the combination of the chain drafts also in order to make the best use of the combination. Some very complicated patterns may be developed on this type of drafting that will be hard to detect for a dobby. For our illustration here we will select for combination of simple example of a 4-harness straight draw and a 16-harness straight draw. Then we will select two chain drafts suitable for these draws and combine them also to get a design.

First the drafts must be combined. Since our selection is to take four harness of the sixteen and four of the four harness draw we must continue to take one and four until the full sixteen harness have been compounded with the four. This draft will use the first four harness for the 4-harness draw and harness 5 through 20 for the 16-harness. The development is shown in Fig. 9.

Now after the full drawing-in-draft is finished we must select two chain drafts that we may combine for a suitable weave. Suppose for the four harness we use the 2 up 2 down cashmere twill and for the sixteen harness we use 5 up 3 down 3 up 1 down 2 up 2 down twill (See Fig. 10). The first chain draft is painted in on harness one to four and the second on five through twenty. The resulting draft is shown in Fig. 10 at the right. We then take the drawing-in-draft and the chain draft and paint in the resulting design by putting in the raisers called for directly above the harness. In other words the raisers indicated for harness one through four will be put in above all harness indicated in the draft for one through four, and the raisers called for in the chain draft for har-

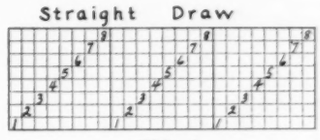


FIG. 1

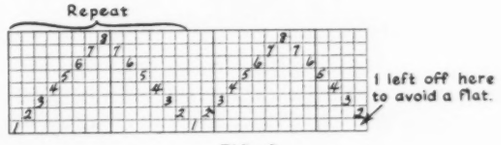


FIG. 2

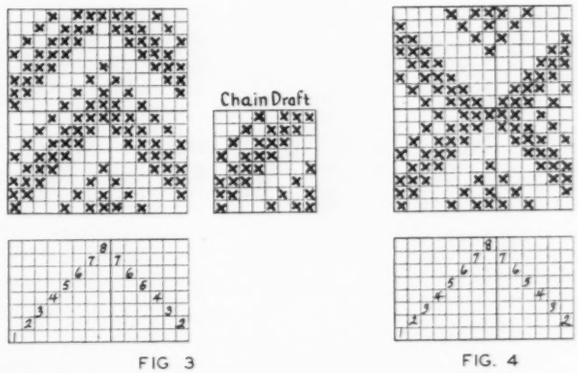


FIG 3 FIG. 4

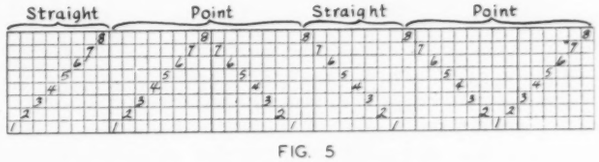


FIG. 5

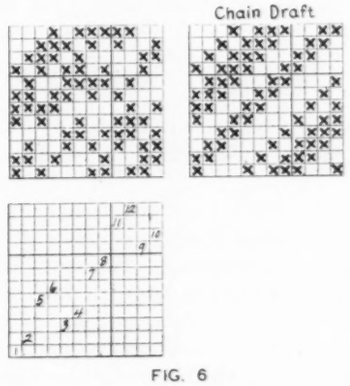


FIG. 6

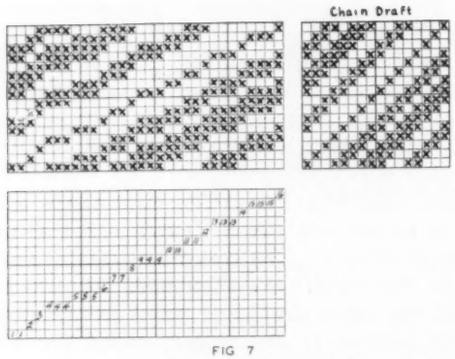


FIG 7

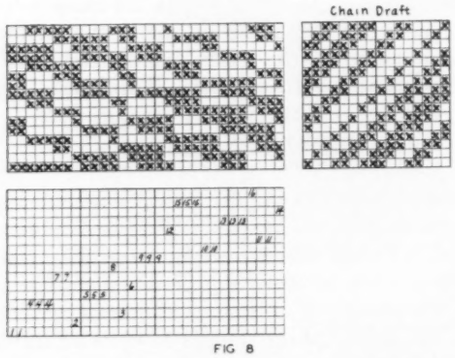


FIG 8

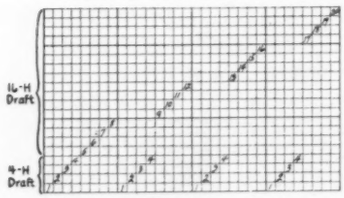


FIG 9

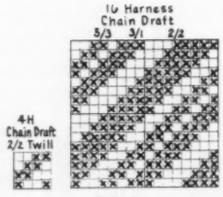


FIG 10

ness five through twenty will be painted in above all harness five through twenty indicated in the draft. We then have the design shown in Fig. 11. The selection of interlacing for ends on the various harness are shown graphically in Fig. 11.

Reverse draft covers another class of drafting often used to change the pattern. The draft is composed by drawing straight from left to right for a number of harness and then to draw right to left for a certain number of harness. The effects obtained in some designs may be the same as in a point draw but in most cases the effect is to cause a reverse in the pattern distinctly different from the point draw. Such a drawing-in-draft and design is shown in Fig. 12. It will be noted that the point does not fall on the same end throughout as would be the case with the ordinary point draw.

Some Pointers in Making Drafts

Now that we have covered some of the theoretical aspects of drawing-in-drafts we may well discuss some of the practical side of presenting these drafts for handling by the mill. So many designers fail to take some of these things into consideration due to their lack of practical experience. We may well begin by explaining the drawing-in operation on pattern work and then speak of the "do's and don'ts".

The general practice in drawing pattern work is to lease the warp on a rack placing the ends in a lease comb to keep them straight for the drawing hand. The drop wires are then swung up on straps in front at a desirable working level. In cases where a plain warp, colored or natural, is used the ends are drawn in the drop wires from bank to bank in the order of one end on the first bank the next on the second and the next on the third, etc., depending on the banks of wires used. Should the warp contain a stripe composed of color or different yarn numbers then the designer must furnish a layout of the warp pattern in order to have the drawing-in operative use the correct ends. Such a layout or model draft is shown in Fig. 13. This layout should be put in on the drawing-in-draft above the harness draft so that all information may coincide as certain colors or sizes of yarn must later be drawn in definite harness.

The operative then draws in the ends through all the drop wires according to this layout. Then if a special selvage is used care is exercised to count out the selvage on the right before starting. The harness are then put up and the operative starts the drawing-in of the harness, entering the ends from right to left as indicated on the draft. Here if the warp pattern is incorrectly drawn in the drop wires it may be detected and corrected before going further. As each repeat of a pattern is completed many good operatives make a quick check of the draw just made to avoid

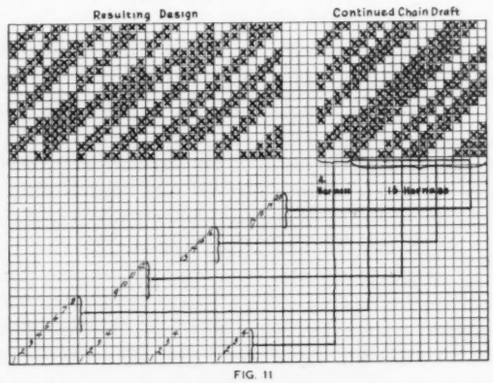


FIG. 11

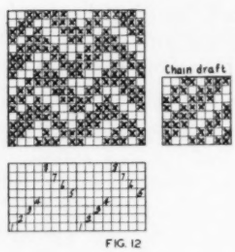


FIG. 12

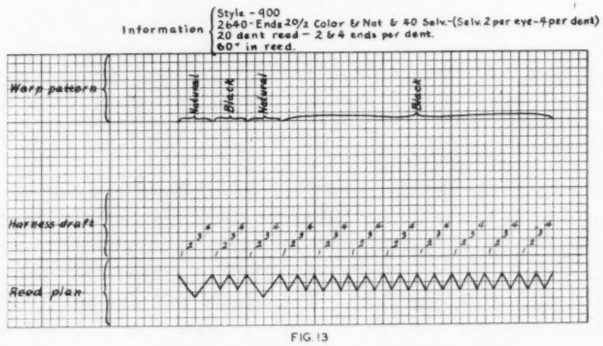


FIG. 13

mistakes. In pattern drawing usually special drawing-in hooks long enough to reach through the harness are used, in fact, they are necessary for proper work. The draw completed, the proper reed is selected, measured off for the spread of the warp in the reed and half the difference of the length of the reed and the warp spread is measured off to indicate the starting point. Tape selvages are left out of the reed since the selvage is drawn on the loom. The reed is also drawn from right to left using a special open eye hook.

Now to make this work easier, which is at best tedious and exacting, do everything possible to give clear instructions. Some of the things that will help are covered as follows:

1. Use large square design paper with the lines not too distinct or printed in inks that may hurt the eyes. Small cross section with the draft crowded in a small area is hard to read.

2. Indicate all harness with numerals in order to relieve the operative of the necessity of counting off the harness. Many errors may be caused with an incorrect count.

3. Put all information on the same paper with the draft if possible. This should include such information as follows: style number, number of total ends in warp, ends in selvage, type selvage and draw if special, reed dents per inch, and width of warp in reed.

4. If a color or pattern arrangement is used, put instructions in the warp layout clearly above the harness on which each special color or end is to be drawn. This may often call for repeating the draft several times in order to cover a pattern repeat but it is well worth the effort.

5. Don't use brackets and multiplication signs to indicate a long draft since the operative has to count her repeats very carefully to avoid leaving out a part of the pattern.

6. If a special reeding is desired then it also should be indicated carefully below the harness draft so that the ends will be dented properly. The reed plan is indicated on the model draft shown in Fig. 13.

7. Explain the entire draft to the operative and ask her to repeat it to you before leaving it to be drawn since all new drafts are difficult the first time even to experienced operatives.

8. Use the same signs and symbols consistently on all drafts to accustom them to your method of making a draft.

"Telling the Facts about the Southern Textile Mills"

TWO UNDISTRESSED "FACES"—Gaston County, N. C., knows its mill employees in this wise. These two elderly employees are cheerful, healthy, independent and self-reliant. Employees of a combed yarn mill, they have worked in the plant for 50 years. A boy who worked with them on the same machine (a reeling machine) now owns the factory.

A "MILL HAND" UNDISMAYED BY THE CAMERA—Fit for cone-winding and fitter for a picture is this typical girl in a combed yarn factory at Gastonia, N. C.

MANY COMBED YARN MANUFACTURERS are concerning themselves with the new leisure of their employees. One North Carolina industrialist provides a hot house so that employees with choice plants can store them there during cold snaps. A flower hobbyist arrives with his prize flower.

A positive program of publicity, to present to the public the true facts with respect to working and living conditions of southern textile employees, has been started by the North Carolina Department of Conservation and Development, under the sponsorship of the Southern Combed Yarn Spinners Association of Gastonia, N. C.

At the request of Mildred G. Barnwell, executive secretary of the association, the state department sent a photographer to Gaston County, and, under Mrs. Barnwell's direction, hundreds of photographs depicting actual conditions of work, home and play of the employees of the county's mills were made. Groups of these pictures were made available to the national photograph distributing syndicates, as well as to individual publishers and national magazines. Those reproduced herewith, along with the captions accompanying them in this distribution, are representative.

Mrs. Barnwell is compiling for further distribution a book composed largely of these photographs. When completed, it is planned to distribute these books nationally, among legislators, educators, libraries, etc., wherever public and political opinion is moulded or influenced.

Unquestionably such positive, straightforward presentation of the real facts will go far in offsetting misapprehensions concerning this industry gained from deliberate or uninformed criticism of it.

Fine Yarn Men Discuss Lubrication

Hear Hooten talk on manufacture of lubricants; pointers on type oil or grease given; cleaning covered by members.

LUBRICATION was the subject of the discussion meeting of the Gaston County Division, Southern Textile Association, held Friday night, February 17, in the clubhouse of the A. M. Smyre Manufacturing Company, Ranlo, N. C. Marshall Dilling, chairman of this division, and secretary-superintendent of the A. M. Smyre Manufacturing Company, presided. Mr. Dilling handled the discussions in a capable manner, pointing out beforehand that no trade names of lubricants should enter the discussion.

J. H. Hooten, Gastonia, industrial sales engineer for the Gulf Oil Corporation, delivered an interesting and informative address on "Lubricating Oils", clearly explaining how the lubricants are made and the care with which they are handled before reaching the actual consumer. He traced the use of petroleum from olden times, when it was mixed with building materials, to its discovery by Drake in Pennsylvania in 1859. During his address Mr. Hooten pointed out the various tests performed by the testing laboratories of the lubricating companies, going into gravity, viscosity, flash and fire tests, carbon residue, length of life, pour and color tests.

It is essential that motors be oiled at regular periods, not too far apart, and even if the motors seem to have sufficient oil in them, it is wise to add just a little to keep the oil up to a certain point."

After his address, Mr. Hooten was questioned on various phases of lubrication and the effects of different types of oils on the machinery. A member, upon asking the viscosity of average spindle oil, was told approximately 75 viscosity is used by the industry as a whole on short or regular draft spinning, but that for modern, long draft spinning at least 100 viscosity oil (a heavier oil) is required. It was explained that the heavier oil is needed because there is a larger and heavier package. The 100-viscosity lubricant will tend to reduce the vibration and lower the power consumption, and very often simply changing the viscosity of the spindle oil will save power. It was pointed out that in changing over from short to long draft spinning it is not needed to change the oil unless the size of the package is changed also, the larger package requiring a heavier oil.

Considering twister spindles, Mr. Hooten said that as a general rule a heavier weight of oil is used, depending, of course, on the size of the package, ring, speed, etc. Occasionally very heavy oil must be used, as on the 5½-inch ring cable twister, which often uses a 200-viscosity oil.

It was brought out that with increased spindle speeds, much better results can be obtained by using the highest quality of spindle oil, both from the standpoint of service and operating of the machinery. This was summed up by Mr. Dilling, who said that as light an oil as will properly lubricate and prevent vibration should be used.

An associate member asked if oil "really wears out", having in mind the changing of motor oil at intervals. The changing of oil in motors and crankcases of automobiles is necessary because of foreign matter that accumulates in it, such as dust, carbon, bits of metal, etc. On some types of oil the mixing of water and oxygen chemically places the oil on the acid side and it then attacks the metal in the motor.

Lubricating Electric Motors

The first discussion from the prepared questionnaire was on the best way to oil and the best kind of oil to use on electric motors; this was begun by G. R. Grice of the Lola Mills, Inc., Stanley, N. C., who brought out the following points:

There are two types of motors used in textile plants, those having rings for lubrication and those having ball bearings. The ring motors are lubricated with an oil whereas the ball bearings are greased. On selecting a lubricant for the ring motors it is better not to select one that is too light as the oil will run out; one that is too heavy will not find its way to all the parts and the metal parts will not be lubricated. It is essential that the motors be oiled at regular intervals, not too far apart, and even if the motors seem to have sufficient oil in them, it is wise to add just a little to keep the oil up to a certain point. In lubricating the ball bearing motors with a grease, it must not be packed in too tight or it will bind the rollers and cause trouble; the grease must also be light enough. The ball bearing motors do not require as much attention for lubricating as the ring type motor. On the market today is one type of motor that is said to run for five years without further lubrication, the bearings being sealed so the lubricant is not affected by outside conditions.

The consensus was that electric motors should be drained, similar to the draining of an automobile crankcase. One member does this every two years, while D. H. Whitener, Myrtle Mill, Textiles, Inc., Gastonia, has his motors drained the first Monday in each month. He has a number of 75- and 100-hp motors that have been running for 34 years and with this system he has no bearing trouble. When questioned he said that 5- and 10-hp. motors would not have to be drained as often, but that he would not run these motors over 90 days without draining. (The motor manufacturers recommend cleaning every third month.)

Mr. Grice told of a conversation with an electric motor repair man, who said that over 65 per cent of the motor trouble is due to neglect of the bearings. In his shop at one time were a number of motors that had been damaged by a bolt of lightning, but if the motors had been properly cared for the lightning would not have burned them out. They had been so neglected that the bearings were worn and when the lightning struck the motors were in no condition to withstand the severe charge.

Another man wanted to know if it is better to use oil or grease in ball bearings, and he was told that this depends on the design of the motors, which are so made as to hold either grease or oil. A motor designed for grease will not hold the oil. He was further informed that oil will outlast grease.

The chairman exhibited a device that fits over the bearing and is equipped with a glass reservoir to contain the oil. Thereby the exact amount of oil available to the bearing may be noticed at a glance and the reservoir filled when needed.

Reported by John C. Fonville.

The subject of comb box and general card lubrication was discussed by H. H. Roberts, Lowell, N. C. Mr. Roberts had run a test on various weights of oil, light, medium, and heavy, in his comb boxes to determine both the temperature of the boxes and the amount of oil that stayed in the boxes. He decided that though the light oil keeps the comb boxes cooler, the medium weight oil flies out less, and is better in the long run to use. For general oiling he uses a medium weight oil, lubricating the fast moving parts each day and the slow moving parts weekly. If the comb boxes are new, which do not permit the oil to fly out so much, the lighter oil can be used, but on older boxes the medium weight is better.

Mr. Hooten told of using a watt-hour meter on a line of cards when lubricating, and discovered that immediately after oiling or greasing the power consumption dropped, but after 15 or 20 minutes the power consumption went back to normal and remained there until the next oiling and then dropped again. By using a No. 2 consistency grease (lighter) instead of a No. 3 consistency (heavier), the lubrication is more constant.

In a test for comb box lubricant, it was found that the light oil keeps the boxes cooler but the medium weight oil flies out less and is therefore better for use in the long run . . . . . .

Charles Ward, Groves Thread Company, Inc., Gastonia, discussed lubrication of combers. The substance of his remarks follow: The cams formerly were greased but trouble developed and since the cams have been oiled every day it has proven a satisfactory method. Better results have been secured by greasing (ball bearing grease) the leather detaching rolls every week, carried out by slipping off the sleeve at the varnishing time. The nipper stud, which is hard to reach, should be oiled every week, the chain every 8 hours, the draw boxes every 24 hours, and the slow motions once each week.

W. N. Williams, Rex Spinning Company, Ranlo, considered it better to oil the nipper studs more often than Mr. Ward suggested, and also was in favor of oiling the cams instead of greasing them.

The chairman asked for experience with oil-impregnated wooden bearings for the detaching rolls and Mr. Ward stated that they have proven satisfactory from an operating standpoint, but that due to their becoming broken they do not last very long. Mr. Hooten has found petrolatum a good lubricant for the detaching rolls.

Oiling Bolsters and Steps on Roving Frames

The next question was: *"How often should bolsters and steps on roving frames be oiled, and what kind of oil should be used?* When putting this question up for discussion, the chairman advised that there is no uniform practice as some mills oil the bolsters regularly and others do not oil them at all. G. G. Whiteside of the Long Shoals (N. C.) Cotton Mills oils the bolsters and steps each week with a medium weight oil, at which time the bobbin gears are lubricated also, while the spindle is lifted. Mr. Roberts, whose roving frames are equipped with oil reservoirs, lubricates the steps every three months. One member oils the bobbin gears every week but has not oiled the bolsters in several years because he believes picking up the spindles permits lint and dirt to enter. He has noticed no wear on the bolsters.

When asked, Mr. Williams advised that he oils the top of the spindles with a bunch of oily waste. To a further question he said that if too much oil is placed here it will cause sticking up of the spindle because of accumulated lint. On a show of hands, it was found that of those present eight oil the bolsters and two do not. One man oils them every morning with oily waste.

W. N. Williams told of his experience with lubricating the ball bearing top rolls, saying that the best lubricant is a light grease; he uses petrolatum and applies it with a grease gun. It can be shot into the bearing until it comes out. This procedure does not take long. It is usually done every 9 months, in the cooler months, though some men recommend this lubrication only once a year. He said it is wrong to pack a bearing with grease, but that if grease of the proper consistency is used it will not pack. He has seen the grease melted and poured into the bearings, but does not prefer this method. Upon being questioned he stated that he prefers ball bearing rollers to shell rollers on speeders.

Another member told of seeing a heavy oil in use on ball bearing top rolls. Mr. Dilling brought out that on some of the older machines the instructions for lubrication were attached thereto on a metal plate.

When called upon S. M. Cauble, Trenton Cotton Mills, Gastonia, discussed lubrication of top spinning rolls and stands. He suggested using an oil not containing a film that will become hard. This occurred with his frames once and he had to remove the saddles and wash them to remove the film. The oil must be one that will not spread to the cots and bosses of the steel rolls. He oils his front stands and front top rolls every 8 hours and the steel rolls and other top rolls once in 40 hours. He finds the drip cup gives excellent lubrication.

The question of using grease on spinning rolls and stands was brought up and Mr. Dilling said that he had tried it but quit as it did not prove satisfactory. A. P. Richie, Dixon Mills, Inc., Gastonia, uses grease on his twisters. Mr. Williams uses grease on some of his spinning frames that are especially equipped to take it, but on other frames he uses oil. One man wanted to know why grease could not be used on spinning as well as twisters and he was told that there is more weight on spinning rolls than on twisters, and that the twister stands are made to be lubricated by a grease instead of an oil.

Oiling and Cleaning Twister Spindles and Bolsters

The subject of oiling spinning and twisting spindles developed finally into a discussion of cleaning the bolsters. Briefly stated, the consensus of opinion was that a good grade of oil is the cheapest in the long run. The weight of oil depends on the speed of the spindle and the size of the package. D. H. Whitener told of changing to a larger package and he thought that the same oil was not satisfactory for the enlarged package, but after making a change to a heavier oil he discovered that the trouble was not in the lubricant so he reverted to the former oil.

The chairman asked if the bolsters are removed and cleaned. Mr. Whitener does this about once a year, but uses no solvent or cleaner; he simply pumps the old oil out of the bolster, cleans it, and blows it off with air. Mr. Dilling brought out that 40 years ago it was the custom to clean the bolsters with kerosene, but this practice is not so common today because of better oils and better spindles. Mr. Williams, also reminiscent, said that on old machinery the bolsters had only one slot to carry the oil back to the spindle, which often made it necessary to clean the bolsters with kerosene, but now the bolsters are built with slots on each side, which eliminates the old "pumping" troubles of the old days.

The subject of corrosion in the bolsters came up and one man said that he is using a penetrating oil to cut this out.

Mr. Richie asked the number of various grades and weights of oils and greases that a spinning mill should carry on hand. Mr. Dilling said that he has one oil for general machinery lubrication, one for top rolls and stands, one for his twisters, one for motors, one

for the pumps, etc., a ball bearing grease, and a grease for the twister stands. Mr. Hooten, upon being asked, said that four oils, not including greases, should be sufficient in the average fine yarn mill: spindle oil, one for general lubrication, one for rolls, and one for electric motors. One of these may be used for most of the other needs of the plant.

Mr. Richie was asked to discuss the lubrication of twister rings. After saying that this depends to a great extent on the speed, weight of package, type traveler, size of the ring, etc., he described his condition of running a 3-inch ring on a 16-hour doff, while another man running the same size ring runs a doff in 4 or 6 hours; in this case it is probable that the latter can grease his rings every two or three doffs, whereas on thread goods it is difficult to stop the frame during the 16-hour doff and grease the rings. The best grease, according to Mr. Richie, is one that will be carried along by the traveler and laid in the ring. Much trouble with the lubrication of twister rings is due to their age, and the spindle being out of plumb. Some mills have the rings greased by only one man, others have each twister hand do his own greasing, which Mr. Richie has found better.

Mr. Dilling said that the self-oiling ring is helpful especially on long doffs. When the question of grease or oil for twisters was brought up, Mr. Williams said that an oil will not last 12 or 15 hours and the grease will. Mr. Dilling said that he has used a grease and brought it to the proper consistency with an oil, and Mr. Cauble advised that he has run by oiling one time and greasing the next.

Payroll System at Marshall Field Mill

MARSHALL FIELD AND COMPANY, manufacturing division, with headquarters at Spray, N. C., have considerably simplified the payroll system at their lace mill, located in Zion City, Ill. A system is installed whereby checks and earning records are produced directly from the original payroll summary sheet, and if the original copy is correct, all other records must be correct. All re-writing in the preparation of the payroll has been eliminated.

Formerly checks and earnings records were written together on the typewriter and the name, check number and earnings data were copied from the payroll summary. Orders required, on an average, ten coupon tickets, one ticket for each bundle of material, and each ticket was written separately. Under the foregoing system the payroll clerk was invariably working under pressure and the many rewritings and re-checkings delayed orders getting into the plant.

Upon installation of the Ditto system, a modern payroll plan instituted by Ditto, Inc., Chicago, the checks and earnings records are reproduced from the summary master without re-writing, twenty checks or earnings records being reproduced in one operation. All coupon tickets are reproduced from one Ditto master, with one writing instead of ten.

The result is that the time required to prepare checks and earnings records has been reduced from eight hours to less than two and the peakload condition has been eliminated. Now orders reach the plant several hours earlier and many costly errors are eliminated.

S. E. Section of Textile Chemists and Colorists Re-elects Philip as Chairman

The winter meeting of the Southeastern Section of the American Association of Textile Chemists and Colorists was held on Saturday evening, February 18, at the Hotel Ralston at Columbus, Ga. After the business meeting, at which officers for the new year were elected, the meeting was addressed by J. Girvin Cluett, of Cluett, Peabody & Company, Troy, N. Y., who presented a clear and interesting description of the sanforizing process. Following Mr. Cluett's paper, there was a lively discussion among a number of the members as to certain detailed points in connection with this process.

The other speaker was W. M. McLaurine, Secretary-Treasurer of the American Cotton Manufacturers Association, Charlotte, N. C., who discussed in a stimulating manner current economics and legislative developments of interest to textile men.

The attendance was approximately 125.

At the business session, a brief report was made on the National Convention held under this section's auspices in Atlanta on December 2-3.

The nominating committee, consisting of L. L. Bamberger, C. A. Jones and E. A. Feimster, Jr., made its report and the following officers for the coming year were unanimously elected:

Robert W. Philip, editor of COTTON, Atlanta, Ga., was re-elected as chairman. Allen Jones, superintendent Muscogee Manufacturing Company, Columbus, Ga., was re-elected vice-chairman. W. Fred Crayton of E. I. du Pont de Nemours & Company, Columbus, who has been treasurer, was elected secretary of the section succeeding A. R. Macormac of Alabama Polytechnic Institute, who was made treasurer succeeding Mr. Crayton. P. N. Collier, vice-president and director of research, Callaway Mills, LaGrange, Ga., was made counselor succeeding C. A. Jones of the Georgia School of Technology, Atlanta. A. Kempton Haynes of Rohm & Haas, Inc., Atlanta, was re-elected as the section member on the National Nominating Committee. The sectional committee for the new year consists of: Henry L. Barthelemy, Tubize Chatillon Corporation, Rome, Ga.; R. A. Field, Jr., Newnan (Ga.) Cotton Mills; Curt Mueller, Bibb Manufacturing Co., Macon, Ga.; and E. A. Feimster, Jr., Eagle & Phenix Mills, Columbus.

Announcement of the next meeting of the section will be made later. Curt Mueller, Bibb Manufacturing Co., Macon; L. L. Bamberger, Lanett Bleachery & Dye Works, Lanett, Ala.; and P. N. Collier, Callaway Mills, LaGrange, Ga., are the program committee of the section and urge any members to submit suggestions for features for the coming meeting.

Jones with Quaker Chemical

James B. Jones has joined the laboratory staff for control and development work of the Quaker Chemical Products Corporation, Conshohocken, Pa. A graduate of the Philadelphia Textile School, and with chemical training at the Rensselaer Polytechnic Institute, he comes to Quaker from the Buffalo Electro Chemical Company, where he carried on research work on bleaching agents.

MODERN METHODS OF DYEING

By Edward W. Pierce*

Article 4—The Direct Dyestuffs

THIS installment covers the direct dyestuffs, their history, development, applications and limitations. It follows the discussion of basic dyestuffs that constituted the third installment in the February issue. Previously, Dr. Pierce had dealt with the development of the color sense, the various types of textile fibers and their dyeing characteristics, and the types of equipment used for dyeing.

The next installment will deal with the acid dyes and their applications . . . . .

SHORTLY AFTER the introduction of basic dyes, which showed the dyers how brilliant effects might be obtained from synthetic dyestuffs, using a comparatively simple mordant for cotton and no mordants at all for wool or silk, there came the first of the direct dyestuffs. The new direct dyes were at once welcomed, because they eliminated entirely the need for a mordant on cotton and so allowed greater dyehouse production. The public may have been somewhat disappointed, because they had been badly spoiled by the brilliant effects furnished by the basic colors, yet had taken the poor fastness to light and crocking as a matter of course.

When the direct or substantive colors were finally established, the dyer was freed from the tedious and uncertain preliminary work that had always attended the mordanting operations and he now found that he was able to get brighter colors than he had previously been able to get from the old wood dyes, even though they were far duller than what had been furnished by the basic series. It is true that fastness came in for but little consideration in the early days, but dyers continued to experiment with their old mordanting and saddening methods, with the result that we have today such methods of after-treatment as chrome and bluestone, to increase fastness to light and washing; a direct heritage from the past.

Among the earliest of the direct dyestuffs were Congo Red and Chrysamine, which few dyers would think of using today, yet these had quite a revival during the World war and are still in demand in the Orient. It is said that in India and China it is customary to test a piece of red cloth by dropping some lemon juice on it and if it does not turn dark, it is rejected as not being properly dyed. Chrysamine is very hard to dissolve and is very sensitive to copper, but since it is both cheap and strong there is still a fair market for it.

There is no need here to go into the chemistry of the direct or substantive cotton colors. It need only be noted that the great majority have a substantive nature on account of their derivation from benzidine or its homologues, while the remainder are characterized by high molecular weights or a large number of nitrogen atoms. Very few of the direct dyes form true solutions, but are generally exceedingly high colloidal dispersions of the type known as reversible colloids, unless by the action of some after-treatment, the colloid becomes irreversible and then we have a dyeing which is fast to either water or even hot soaping. It has been noted that the addition of urea or pyridine to a solution of most direct dyes will bring them nearer to the true solutions and thus increase their ability to penetrate tightly woven fabrics or hard twisted yarns. On the other hand, the presence of other colloids in a dyebath will retard the dyeing and permit a more even distribution of the color throughout the material. Temperature conditions also play a great part in the manner in which the coloring matter is taken up by the fibers and the presence of ionisible salts is necessary in the dyeing of full shades. Since the sodium salts of Congo Red and Benzopurpurine are scarlet and the color acids themselves are dark, we may assume that the dyestuff is taken up by the cotton fiber as a whole, without any dissociation and in fact it is not according to rule for any colloid to dissociate in water as is the case with the ordinary salts. The combination of color acid and sodium which forms the dyestuff is quite sensitive and may easily be broken up by acid substances, liberating the dull color acid, hence we are in the habit of adding some alkaline material like soda or phosphate to keep the dyeing as bright as possible.

Direct dyestuffs are absorbed by cotton and regenerated cellulose fibers from their solutions in water, but there is the widest range of difference throughout the whole line of known dyes when we study their affinities under different conditions of time and temperature. Some types will actually dye 20 per cent heavier at 100 degrees F. than at a boil, others will give hardly any color until the temperature of the dyebath reaches 175 degrees F. There are some which will give 80 per cent of their color in 2 to 5 minutes and others which require a full hour to give a satisfactory dyeing. It only remains for the user of the dyes to assemble the necessary data in order to get the best results in his work. Dyes which are taken up slowly at a boil will be found to be the best for regular dyeing operations where evenness and penetration are of the most importance. Dyes which give their best color value at 140-150 degrees F. will be found best for jig dyeing, while those which give full shades at low temperatures and in the shortest time are the best for padding. The relative solubility should also

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(This series comprises abstracts of lectures delivered for several consecutive years to students in the art of dyeing, revised to adapt them to the general textile reader.)

be noted, especially for padding colors; this is reported in parts per thousand, or grams per liter. A dye rated at 100 ppM would be classed as excellent, although there are many that exceed this figure, yet one with a rating of 15-20 ppM might be quite satisfactory when used for light shades, but would not be suitable for dyeing heavy shades with a low liquor ratio.

Some strange complaints have been made regarding the solubility of dyestuffs; in one instance it was stated that the dye formed large balls of gummy material with dry powder inside, whenever it was attempted to dissolve it. Investigation showed that the custom was to boil up a pail of water and then dump the dry dyestuff powder into it; imagine what would happen if one attempted to make a batch of flour paste in the same way, but when the same dye was first stirred to a smooth paste with cold water and then more hot water was added, a perfect solution was obtained without difficulty, this being a color with a solubility of 150 ppM. The more soluble the dyestuff is, the more likely it is to form gummy lumps when it is not handled properly.

Early Efforts Toward More Brilliant Shades

In the early days of direct dyes, the main object was the production of new and more brilliant shades. Later the natural reaction of the ultimate consumer was felt and efforts were made to increase the fastness in all directions. The outstanding examples are the efforts of the direct dyestuffs to duplicate the qualities of those two classic colors of former years, Turkey Red and Indigo Blue. With the reds we first note Benzopurpurine 4B and a series of other purpurines which were great improvements over Congo Red, then the Diamine Scarlets, B and 3B, which were still better in fastness to acids, then the Benzo Fast Scarlets, SE and 4BS, which resisted mineral acids. Still the fastness to washing was insufficient and we had to turn to Primuline, which could not meet the full approval of the trade on account of its dull shade and poor fastness to light. The brighter Diazo Reds were bright enough and fast enough to washing, but beside Turkey Red were far outclassed in fastness to light. The farthest point reached by any strictly direct bright scarlet dyestuff, while fast enough to acids and light, cannot hope to compete when it is subjected to kier boiling or repeated laundering. Here the direct dyes stop, for the present, in their effort to equal Turkey Red. By way of a digression it may be noted that an attack from another angle has been made by the Naphthols, which are still short of their objective and the nearest approach to the beauty and fastness of Turkey Red at the present moment has been made by a combination of vat dyes. Through the blues we have a similar evolution, although the blues include many types which are given after-treatments with metal salts and show some advantages over the reds, but we cannot say today that we have a direct blue dyestuff which is a perfect substitute for Indigo.

Dyestuff manufacturers have gone far in the improvement of the fastness to light, in fact more progress has been made in this direction than in any other. At first an improved fastness to light was obtained by the introduction of copper into the dyestuff itself, instead of having it used as an after-treatment, but since the presence of copper in a dye is objectionable when the goods are intended to be coated with rubber and vulcanized, attempts were made to utilize other metals such as nickel and chromium and to develop new compounds without metals. These ventures have been highly successful, so that today we may have direct dyeings with a fastness to light of 7, which figure is only excelled by a very limited number of vat dyes and is much better than the average vat dye. Where fastness to light is the main consideration and the materials do not have to be subjected to laundering, the advantages of the faster direct dyes over vat dyes is quite evident.

Mill Men Should Keep Accurate Records

While all manufacturers of dyestuffs issue sample cards and circulars, which list the more important properties of the products and show the shades which can be produced with varying percentages, there is much more to be done by the mill chemist before the dyehouse has the kind of information which will permit it to operate at its highest efficiency. A complete investigation should be made of each type, so that there will be on record a full description of the possibilities and fastnesses of that color, then a classification should be made of all types which fall into each particular group, so that the dyer may have, on request, a list of colors which will exhaust under certain conditions with a perfect regularity, which will have an equal fastness to each of the conditions to which they are to be subjected and at the same time be the best money value obtainable. This may prove to be too great a task for the individual mill chemist, but frequently the manufacturers have these data already worked out and are able to furnish a group of dyes for each particular purpose. It is a poor practice to choose dyes at random on account of their shades only, because most combination shades may be made in many different ways, so an effort should be made to gain all the advantages that can be had, rather than to try to get the easiest combination which will match the shade.

In checking up the properties of direct dyes, note should be made of their behavior with respect to other fibers. Some will be found which are union dyes and will dye wool or silk, in the same bath, nearly the same shade as the cotton or rayon. Generally the animal fibers will be redder or yellower than the cotton, sometimes much darker and often much lighter, but this depends greatly on time, temperature and the degree of alkalinity of the dyebath. Since the use of direct dyes as union colors frequently results in the dye boiling off the cotton and over-dyeing the wool or silk, as the time of dyeing is prolonged, it has been found very profitable to make a selection of direct colors which dye cotton or rayon and give little or no tint to wool or silk and then depend on neutral dyeing acid dyes to cover the animal fibers, in the same bath.

Another fiber which must be considered today is acetate rayon; most of the direct dyes will not dye this fiber, unless it has been saponified by strong alkalies, but there are many colors which will give it a

strong tint that is not easy to remove. Since many fancy fabrics are now made of several fibers including acetate rayon, especially men's half-hose, we must be able to leave the acetate rayon reserved, so it may be dyed with its own class of dyestuffs. When a solid shade is wanted, it is not necessary for the acetate rayon to be clear, but for two-tone effects a clear fiber is often necessary.

After-Treatment of Direct Colors

The after-treatment of direct dyes to improve their fastness is an interesting development. Two of the older direct dyes, Chrysamine and Toluylene Orange G were noted as being very sensitive to copper, so they were given an after-treatment with 2 per cent each of copper sulphate, bichromate of potash and acetic acid, with the result that they became much redder and duller, but with an increased fastness to light and washing. From this we have a list of many direct dyes which may be greatly improved by such an after-treatment. In general any direct dye which is made fast to washing by the chrome and copper after-treatment, will also be fast to the alkaline perspiration test, which is just as important as wash-fastness for dress goods.

There are a number of direct dyes which are made fast to washing by an after-treatment with 2 per cent of formaldehyde. Some do this in an alkaline bath, some in an acetic acid bath and others with formaldehyde alone, all at 120 degrees F. There have been proprietary preparations offered which consist of either para-formaldehyde alone or combined with powdered bichromate, a combination which any chemist will concede to be self-destructive. The question of adding acid or alkali must be decided with regard to each individual dye, but in most cases the best fastening results are to be had with a neutral formaldehyde bath at 120 degrees F. for 20 minutes to ½ hour.

There is another form of after-treatment, by means of complex organic bases, which results in an excellent fastness to water and cross dyeing, but which does not improve the fastness to washing. A lesser fastness to water is also obtained by a treatment with solutions of a number of metallic salts such as magnesium sulphate or even dilute organic acids like acetic, formic, lactic, etc.

A frequent requirement for direct dyes is that they shall be easily dischargeable to a pure white, or, what practically amounts to the same thing, that they shall be easily stripped by the regular hydrosulphite stripping agents. Of course direct dyes are not heartily recommended as ground shades for colored discharge printing, because they seldom have enough fastness to washing to meet manufacturing requirements, yet there are some printers of cheap materials who use them and dispense entirely with the final wash, leaving this to the consumer to discover the shortcomings. Direct dyes are frequently used for direct or application prints, being applied to cotton, rayon or silk with a suitable thickener, to which some albumen has been added to help the wash fastness and then fixed by a simple steaming, with or without pressure.

Direct dyes are also used in the coloring of leather, paper, straw, wood chip, cellophane strip and a great variety of sundry purposes.

Developed colors are first of all direct dyes, which by suitable chemical treatment, form new coloring matters which generally have a different shade and show a very good resistance to washing. The first of the developing colors was Primuline, which also appeared under the name of Polychromine. It dyed on cotton a sulphur yellow shade, which, when treated with sodium nitrite and acid, produced an orange colored diazo compound, which was capable of combining or developing with the amines or phenols to produce a variety of shades. The most popular shade was that produced by coupling with Beta Naphthol, a dull bluish red of little fastness to light, but quite fast to washing, yet not dischargeable to a white with hydrosulphites. The process was very interesting but the shade and fastness of the color left much to be desired, so when the Rosanthrenes and Diazo Fast Scarlets were introduced, together with a large range of yellows, oranges, blues, violets and greens, the dyers had a means of producing a great variety of ground shades fast to washing, which could be discharged to a clear white and which are still used on cotton, rayon and silk materials, being printed with even vat dyes and well soaped before finishing. Most of the printed dress goods seen on the market today, which are discharge styles, are made in this way.

Closely related to the developed colors are the coupled colors, these are generally dyed by padding and then coupled directly with diazotized paranitraniline or other bases. Many of them are dischargeable, but the range of shades is limited, so that of late their use has greatly diminished. The principle is sound and they have many advantages, principally in that they avoid the danger of being affected by light during the dyeing operation. It is almost incredible the way the regular developed dye can be affected by even diffused light while it is in the diazotized condition, before development, this causes clouds and streaks that show themselves after development, making it necessary for the dyer to strip and re-dye the goods.

Direct dyestuffs, therefore, are able to furnish almost every requirement that may come up, but unfortunately there are no direct colors in existence which have all the necessary qualities in one product. That is why it is necessary to assemble all possible information and classify the various products into groups, which will take into consideration all of the various requirements a color has to meet, both during manufacture and during use.

(The fifth article in this series, to cover the acid dyes and their applications, will appear in an early number.—The Editor.)

Making Allowance for Twist Contraction

THE PERCENTAGE of contraction for roving made on slubber, intermediate and fine frames is about 1 per cent when using a twist multiple of 1.20 and the contraction in yarn made with a twist multiple of 4.75 is about 4 per cent. So in figuring accurate drafts the above allowances should be made for these contractions due to twist put in.

The most irksome experience is usually the most valuable.

CURRENT TEXTILE TOPICS ....

Talk of the Month

PSYCHOLOGICAL CYCLES are a big factor in the reckoning of business. So far as we can see, that is the element which has delayed ordering of cotton goods in reasonable volume through the first two months of the present year. Business undoubtedly is in a recovery swing and yet nine to ten months of the tendency have passed without a concerted forward buying movement of any length in cotton goods. Presumably the explanation is that confidence is hard to restore after sad experience.

Buyers slow to forget sad business experience

Of course it must be admitted that business at large has been facing unprecedented political conditions at home and abroad which naturally are productive of caution and fear. The memory of unhealthy inventory conditions after the forward movement culminating two years ago lingers in the common mind. It is something eradicated only by time, coupled with a situation which puts buyers on the defensive as to supplies and price tendency; also under clearly indicated condition of freer consumer buying.

Surface conditions as late as mid-February were hardly encouraging in the cotton industry. Underlying developments were of a different nature. On the surface, buyers were still hammering for concessions in a market below cost of production for mills. Manufacturers of cotton goods were deliberating again on the advisability of renewed curtailment when normally, on the basis of long experience, buyers should have been pushing for goods at advancing prices.

It is a truism that buyers are more confident about operating on a rising market and equally true that they never help along such a condition. This partly explains a protracted period of unprofitable mill business when requirements of consumers in cotton goods are broad and a recovery of general nature is under way. The demoralized situation in raw cotton gives a further explanation, as trade observers hold that circumstance to have been a considerable factor in hand-to-mouth buying.

Significant of what may be expected, apart from the influence of an unpredictable cotton situation, is the recent experience in wool textiles. Buyers of wool goods did not prepare adequately for the fall season. They came into the spring season with mills behind on deliveries and so finally the upward turn in price became definite and in spite of import threats from the revisions under the Anglo-American trade treaty the industry has made healthy progress.

In the midst of recent dullness, the cotton industry gave signs of developing a similar situation. As far back as the end of 1938 it appeared that wholesalers and large consumers of industrial cotton goods were well below requirements in inventories. Before the end of January some types of goods actually were beginning to show shortages. The existence of ample supplies at first hand in a few of the staples was misleading as to the whole picture.

Here the psychological element injects itself, however, and buyers wait for pressure on themselves before loosening on their conservative policies. Mills have only the negative satisfaction of knowing that a constant flow of small orders and requests for quick deliveries reveal the need of consumers. Hand-to-mouth buying may bulk larger over an extended period, but producers cannot make the profits that come when buyers find it advisable to cover potential demands.

Accounting somewhat for the discouraging mill business in the first two months of the year, meantime, is the indication of a seasonal change. It may be that the time of ordering months ahead in January and February is a thing of the past. At any rate, a report from the primary market for cotton goods states that in recent years a lot of business that used to be placed in that period has been delayed until March.

Raw Cotton Situation

What will happen to raw cotton is obviously a matter of profound concern to manufacturers. The return of a free market is a remote outcome, although the ultimately desirable thing. There is precedent for the removal by orderly methods of a great commodity surplus—notably the Australian wool supply after the war—but a suggestion out of the past in the present attitudes toward economics is hazarded with tongue in cheek. Ordinarily, even with a tremendous surplus, moreover, the demand in an active market would at least stabilize prices. Supply dominates in depression; demand in recovery.

But in recent months we have had the anomaly of growing (artificial) scarcity of desirable grades of cotton in a period of abundance—in fact extreme abundance. Thus from this angle also there was a suggestion in February of possible drastic curtailment in production of printcloths. Without release of some loan cotton, it appeared that mills would be forced to pay prices based upon shortage and at the same that the moderately burdensome supplies of certain printcloths could well be held for appreciation in value.

Latest statistics of cotton spinning activity are indicative of the recovery tendency, although buying has been so spasmodic as to preclude mill profits. The figures are 82.3 per cent of capacity, on an 80-hour week, for December compared with 58.3 for the same month of 1937. Figures on January consumption of cotton are similarly significant, although some uncertainty was created for the future mill trend by the backward attitude of goods buyers. The January consumption was reported by the Census Bureau at 591,991 bales, compared with 433,258 in January 1938.

New England Mill Situation

TWO MONTHS of the calendar year have not been as encouraging for cotton mills of New England as might have been expected. The chief element of hope, in a slow progress for the manufacturers of finished goods, was the sustained movement of goods through finishing plants. Another underlying element of favorable aspect was the orderly merchandising of combed goods. With recovery in the air, it was felt that the mills would be in position to capitalize on the first broad movement of forward covering by converters.

December brought one of the intermittent movements that have characterized buying since the low point was reached late last spring. That was sufficient to clear away such stocks as had accumulated in fine goods, the backbone of New England production. The combed-goods mills have persistently held to a cautious production policy and, in consequence, prices have not been under the pressure exerted in some other departments of cotton manufacturing.

It was estimated late in January that sales, although not pushing the mills of the district, had consistently run ahead of output for about six months. Thus manufacturers were enabled to raise prices at least toward cost levels. The middle of February found the outlook promising at least to the extent that buying of goods was accompanied by requests for quick shipment. Low secondary stocks were clearly indicated by this circumstance.

This condition is apt to become pronounced when the spring merchandising period in finished goods reaches its peak. In fact before this comment is published, buyers of fine gray goods not unlikely will have found themselves in difficulty. Mills have not built up stocks against potential demand. Thus a concentrated demand on producers logically would be calculated to catch the converters flat-footed. However, it seems that such a preliminary is inevitable in the steps toward normal buying after a depression.

New England fine goods producers increased their operations slightly in December, while the southern mills on coarse goods made a nominal reduction in their operating schedules. This difference, says the First National Bank of Boston, is attributed to the general nature business in the two divisions of the industry. It states that fine combed yarn fabrics are generally manufactured against order, with production geared closely to demand.

Another fundamental, common to all industry, was the subject recently of pertinent comment by Robert Amory, president of the Nashua Manufacturing Company. He spoke to the Boston Association of Textile Salesmen on the disparity between costs of manufacture and of distribution. It is many years since technological progress created a distribution problem, but the solution is slow to be reached.

As Mr. Amory stated, there is no use in increased money earnings if retail prices more than keep pace with them. He made an argument for simplification of methods to reduce the cost of distribution. Consumers' demands have not been satisfied. "To obtain the low-cost benefits of mass production, factories must have a large run of each article in their line." The consumer will provide the larger demand if prices of the distributor are consistent with mass-production costs.

Among the ideas for simplification, Mr. Amory suggested that distributors should try to figure out what is really needed, why it is needed and whether it will give service. He said that no mill could make different articles for every distributor and at the same time gain the advantages of low-cost production. Enough distributors must agree on similar articles for large production thereof, if the cost is to be kept down and consumption stimulated.

Naumkeag Steam Cotton Company of Salem, Mass., which this spring will celebrate its hundredth anniversary, was the first enterprise to run a mill on steam power and is one of the outstanding successes in this district. Rudolph C. Dick, treasurer, stated in his annual report, that the company not only held its place in the market last year, but made a gain because it has more accounts on its books than at the same time in 1938.

During the fiscal year ended November 30, 1938, says the recent annual statement, the company expended $568,000 for new equipment and repairs at its mill and bleachery. It will continue with improvements this year. While at the time of writing Mr. Dick found business not very good, he said the company was hopeful and looked for a few good months before the approach of summer.

The Pacific Mills, great diversified textile enterprise, has been organized into three major divisions for the purpose of segregating the various classes of merchandising units and operating responsibilities. These three groups are: worsted and woolen section; Northern cotton and rayon section; Southern cotton section.

The Naushon Mills, a new corporation formed to take over the Dartmouth Mills of New Bedford, has been busy with wholesale re-arrangement of machinery and reconditioning of equipment damaged by the September hurricane. The corporation has secured a loan credit of $370,000 from the RFC and $130,000 additional from other sources. Employees will subscribe $150,000 of capital through deduction of wages for which they will receive preferred stock.

Ball Bearing Maintenance

The most important point in the care of ball bearings is cleanliness. This does not mean simply wiping off the bulk of the dirt that collects during this assembly with a half dry rag. It means careful handling and protection at all times so that there will never be need for wiping dirt off the bearing.

Lubricants should be free from dirt and kept in closed containers. Avoid overfilling the housing with grease. This might prevent dirt from entering the bearing but the heat generated will cause the lubricant to break down and escape.

Experience has taught the users of large numbers of ball-bearing motors not equipped with an overflow sump that periodic cleaning of ball-bearing housings is the price of freedom from wholesale bearing failures and repair costs.

—Westinghouse Electric and Manufacturing Co.

COMMENT on the Cotton Market

New Orleans, February 18, 1939

FOR WANT OF SOMETHING DEFINITE as to this year's farm program as it will apply to cotton, there were no important price changes in the market during the past month, values ruling comparatively steady. Domestic consumption of lint cotton during December was large, but exports of raw cotton from the United States and world spinners' takings of American continued to run comparatively light, and there was no improvement in the demand for spots, although certain grades remained in request.

A sustaining feature of the situation is the scarcity of desirable grades of "free" cotton, viz.—cotton not under government control. Due to the operation of the loan plan, the available supply of "free" cotton is gradually being reduced to a point where some loan cotton may be released. In other words, loan stocks may be released to afford spinners certain grades to satisfy their wants. Secretary Wallace was credited with giving the opinion that possibly loan stocks would be released later in the season although it would take congressional legislation to do so. Some traders hold to the belief that old crop deliveries are likely to rule comparatively strong "if there be no loan releases". Recently the C. C. C. reported completed loans totaled 4,228,033 bales, a gain for the week of 56,406 bales.

The surplus, in the way of loan cotton, now in the hands of the government is above the 11,000,000 bale mark, and many in the trade believe that with any revival in the demand of consequence for goods and in the demand for raw cotton for export during the last half of the season a tight situation is likely to develop unless some loan cotton is released in quantity.

Regarding the possibility of removing the loan on cotton, Secretary Wallace was also quoted as saying that to remove the loan from cotton would seriously disturb world markets but at the same time said that this country would do all it could to hold its share of world export markets.

The trade, therefore, is at sea as to what to expect as yet as regards this year's farm program as it will apply to cotton.

There are a number of proposals, in the way of plans for cotton this year, and it remains to be seen what action will be taken. Meanwhile the period for general planting is near at hand. According to private advices planting has already begun in the early-producing district of the lower Rio Grande in extreme southwest Texas.

Advices from English cotton mill centers indicate that the textile industry in that country is still depressed.

In France textile conditions improved.

The German cotton textile industry was said to have closed 1938 with mill operations at the highest level in years.

Domestic goods sales the past week were small with prices steady at recent declines. Volume of sales for the week were estimated at around 35 per cent of production. Mills are talking of curtailment in the next two months. Mill activity for the week registered a seasonal decline.

The Bureau of Agricultural Economics stated recently that stocks of American cotton at European ports were smaller than a year ago, totaling 944,000 bales on January 20 compared with 1,304,000 on the corresponding day in 1938. The Bureau said domestic mill buying continued restricted to a comparatively small volume, but the daily rate of mill consumption continued well maintained and substantially above a year ago.

CENSUS REPORT

United States—Bales—	This Season	Last Season
Consumption of lint, January	592,000	433,000
Consumption of lint, 6 months	3,392,000	3,078,000
Mill stocks January 31	1,627,000	1,759,000
Stock in public storage and warehouses January 31	14,782,000	11,815,000
Stock in mills, public storage and warehouses, January 31	16,409,000	13,574,000
Stock in mills, public storage and warehouses, December 31	17,028,000	13,606,000
Active spindles during January	22,440,000	22,325,000
Active Spindles during December	22,445,000	22,337,000
Consumption of lint in cotton-growing states, January	503,000	372,000
In New England States	74,000	50,000
In all other states	15,000	11,000
Consumption of lint in cotton-growing states, 6 months	2,875,000	2,627,000
In New England States	425,000	370,000
In all other states	92,000	81,000
Active spindles in cotton-growing states, January	17,057,000	16,897,000
In New England States	4,768,000	4,815,000
In all other states	615,000	614,000

BRITISH BOARD OF TRADE REPORT FOR JANUARY

Year—	1939	1938	1937
Exports of yarn, lbs.	13,000,000	11,000,000	14,000,000
Exports of cloth, yards	121,000,000	138,000,000	161,000,000

AMERICAN COTTON

August 1 to February 17th—Bales—	This Season	Last Season
Brought into sight (marketed)	9,379,000	13,181,000
Exports from the U. S. including Canada	2,532,000	4,305,000
Spinners' takings, world	7,376,000	7,664,000

WORLD'S VISIBLE SUPPLY OF COTTON

February 17—Bales—	This Season	Last Season
Stock at U. S. ports	2,673,000	3,195,000
Stock at 102 interior towns	4,446,000	3,393,000
Afloat to and at ports of Europe	1,055,000	1,668,000
Afloat to and at ports of Orient	174,000	257,000
Totals of American	8,348,000	8,513,000
Of other kinds	2,345,000	1,888,000
Total of all kinds	10,693,000	10,401,000

TOTAL AVERAGE RAINFALL, TEXAS, IN INCHES

Year	1939	Normal
January	3.25	1.69
November 1 to January 31	6.56	6.15

◆

National Oil Enlarges Plant

The National Oil Products Company, with a large plant at Cedartown, Ga., has begun work on an addition, which will increase the production.

◆

Munnecke Goes to New York for Marshall Field & Co.

W. C. Munnecke, retail operating manager of Marshall Field & Company, has been transferred to the manufacturing division. He will have his headquarters in New York and will be connected with the management of all branches of the manufacturing division, of which Luther H. Hodges is general manager.

Mr. Munnecke's rise has been rapid. Born in St. Louis in 1906, he has lived in Chicago since 1908. He graduated from Dartmouth in 1927, joined James O. McKinsey & Company in 1929; became a bank receiver in 1931, and entered Marshall Field & Company in 1933. After experience in the controller's and treasurer's offices in both the wholesale and manufacturing divisions, he was given charge of retail operations in June, 1937.

What the Southern Mills are Doing

Two North Carolina organizations have recently acquired group life insurance policies for the protection of their workers. They are the Piedmont Processing Company, at Belmont, N. C., and the Marvin Hosiery Mill, Inc., at Lincolnton, N. C. The Piedmont Processing Company workers, engaged in the processing of yarns, are eligible to coverage in amounts ranging from $500 to $1,250 each, according to rank and sex, and the 85 employees thus covered will share in the payment of the premiums. The employing company will also pay a part of the premium, the policy having been issued on the contributory basis. Fifty-three workers are covered under the Marvin Hosiery Mill policy for a total of $38,000. Each is eligible to insurance in amounts ranging from $500 to $1500, according to rank and sex. This policy, also, is of the contributory type. Both policies have been issued by the Prudential Insurance Company of America.

Another phase of N. C. State College's $1,600,000 building program will occur January 16 with the opening of bids for construction of a new textile building designed to be the most modern of its type in the South. Estimated cost of the building is $350,000. Actual construction of the new building is expected to begin shortly after the contract is let. Workmen already are clearing the site and preparing for foundation excavation. The new textile building will be four stories high and will conform architecturally with other buildings in the rapidly growing west section of the campus. It will contain approximately 75,000 square feet of floor space. The building now in use contains about 50,000 square feet.

Marshall Field & Company, manufacturing division, Spray, N. C., has built a new Y. M. C. A. building at Fieldale, Va., where plants of the company are located, and has presented the new building to the community. It is a spacious structure of red brick and stone, located in the heart of the town. Included in the Y. M. C. A. are rooms for classes, music, library, pool, barber shop, beauty parlor, and gymnasium. Playground facilities offer a soft ball field, baseball diamond, and tennis courts.

Rock Hill (S. C.) Printing and Finishing Company has let the contract for a new addition to A. K. Adams Company, Atlanta, Ga. Size and cost of the building is not known, but officials said sometime ago that the new unit would allow the employment of 200 persons. As announced in the February issue, this company recently purchased three blocks of property to provide space for expansion.

Plans have been announced for the merger of the Southern Webbing Mills and the Carolina Webbing Company, Greensboro, N. C. John K. Voehringer, Jr., will be president and John T. Kilpatrick vice-president. Elastic fabrics will still be manufactured. The output of the one plant is expected to exceed the past production of both.

Dunean Mills, Greenville, S. C., have made plans to erect a new building and install 4,000 twister spindles therein. It will measure 42x121 feet constructed of concrete, steel, and wood.

Green River Mills, Inc., Tuxedo, N. C., have erected a new building 68x38 feet for a yarn gassing department. This plant also has installed two new Roto winders and has added 400 spindles of skein winding.

Chatham Manufacturing Company, Elkin, N. C., has practically completed a new addition costing $20,000. The building is to be four stories and of brick and steel construction.

The Henderson (N. C.) and Harriet Cotton Mills will modernize their plants and install new machinery. Work is to proceed gradually.

The Jasper (Ga.) Spread Company has started manufacturing chenille bedspreads. This is a new company headed by E. F. Jones.

Sequoyah Textile Company, Calhoun, Ga., has begun operations in producing chenille bath mats.

China Grove (N. C.) Cotton Mills has installed four new twisters.

Book Reviews

"Natural Laws Applied to Production", Third Edition

Mathews Conveyer Company, Ellwood City, Pa., has made available the third and revised edition of *Natural Laws Applied to Production*, a 32-page well-illustrated booklet that may be easily understood by the layman. The text deals with a basic principle not too well understood throughout industry. Such factors are covered as the law of least action, functional sequence, the laws of production, laws of materials handling, the function of management, etc. For one interested in the subject of materials handling, the study will prove beneficial.

◆

"The Basic Yarn Formula"

A helpful booklet to all mill men that have occasion to figure roving, yarn, or cloth calculations has been published by Horace L. Pratt and J. Emery Nash, authors, entitled *The Basic Yarn Formula*. The text constitutes a reprint of four articles appearing in the July, August, September, and November 1938 issues of COTTON, and deals with the relation of all cotton roving and yarn calculations to the basic yarn formula. Besides, included is a yarn conversion table and a set of rules. The booklet is pocket-size, 4¼x6-inches, and contains 31 pages of information pertaining to the development of the basic yarn formula and its application in the cotton mill. It sells for fifty cents, with postage paid by the seller, and may be secured either from Horace L. Pratt, Box 139, Shawmut, Ala., or through COTTON's book department. Special prices are offered on orders of 10 copies or more. Mr. Pratt is connected with the Shawmut Mill Division of the West Point Manufacturing Company and Mr. Nash is textile vocational instructor of the Chattahoochee Valley Textile School.

◆

"Vepar", a New Monthly

A new foreign publication that is attracting wide-spread interest is *The Vepar*, a monthly journal devoted to commerce, industry, and trade; published in Bombay, India. The paper is prepared in both English and Gujerati. Address of the new publication is 32 Gulalwadi, P. O. Box 3574, Bombay 4, India.

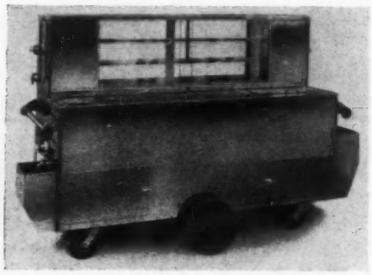
Greenwood and Brenizer District Sales Managers for American Chain & Cable

R. E. Greenwood, formerly of Philadelphia, has been appointed district sales manager of the Chicago territory of the American Chain Division of the American Chain & Cable Company, Inc., with headquarters at 400 W. Madison St., Chicago, a similar position to that he held in Philadelphia. He succeeds G. B. Kutz who has been transferred to York, Pa., as assistant to the general manager of sales, American Chain Division. R. C. Brenizer has been appointed Philadelphia district sales manager of the division, with headquarters at Second & Diamond Streets, Philadelphia, succeeding Mr. Greenwood.

New Textile Equipment and Materials

New Food Service Carts for Employees

The Swartzbaugh Manufacturing Company, Toledo, Ohio, has designed and made available an up-to-date food service cart, the Ideal Conveyor, for serving food and drinks to employees on the job. It has been proven scientifically that a worker is at his maximum efficiency when he is permitted to have food at intervals more often than the established three-meals-a-day, and as it is not practical nor desirable for textile operatives to leave their jobs, the food service cafeteria fills a definite need. There are several models of the carts available. The one shown in the accompanying illustration has been designed for maximum size with minimum weight. It is 97x44x60-inches high and has body and framework built completely of aluminum. The refrigeration tank is copper. The heated compartment has stainless steel at all points where there is contact with food. The conveyors may dispense pastries, soups, gravies, stews, meats, and chilled deserts.



Food Service Cart

◆

Continuous Indication and Finger-Tip Control of Stretch During Sizing on Rayon and Acetates

Charles B. Johnson, Paterson, N. J., has designed a new stretch indicating device on the company's latest rayon sizer, which shows at all times during sizing the exact amount of stretch being given to the warp. It consists of an indicator box, connected by flexible shafts to gears at both ends of the sizer, where the speed of the rolls is measured and transmitted to the indicator box to be automatically reduced to percentage of stretch and shown on a calibrated dial. The amount of stretch taking place is constantly shown on the dial, and any change in stretch is immediately apparent. The finger-tip control of stretch is obtained by a device consisting of a differential between the quetsch and the first cylinder and operated by a knob set close to the stretch indicator box. This knob is calibrated to permit indicated changes in stretch as small as ¼ per cent. The differential allows for infinite gradations of stretch, plus or minus.

◆

New Flame-Proofing Chemical

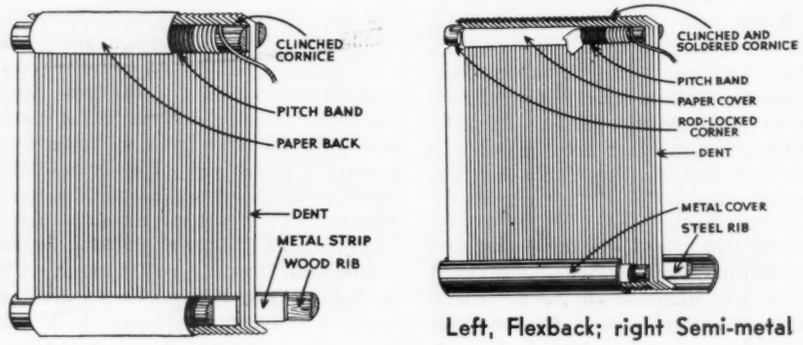
Quaker Chemical Products Corporation, Conshohocken, Pa., has developed a new white crystalline powder for use in flame-proofing fabrics that is said to retard fire, possess no afterglow, impart body and add weight, does not stiffen the fabric nor affect the handle, and is resistant to many dry cleanings. It is termed Pyr-e-pel. It is completely soluble in hot or cold water, but insoluble in oils, hydrocarbons, and solvents. It will not cause discoloring or odor on goods on ageing, according to the manufacturer.

◆

New Flexback Reed

The Emmons Loom Harness Company of Lawrence, Mass., have developed two new reeds. The first of these, called "Semi-Metal" is less expensive than an all metal reed, yet immeasurably better than a pitchband, according to the manufacturer. It is recommended for difficult rayon, cotton, duck, and worsted weaves. In the "Semi-metal" construction, ribs of half-round steel wire are wound with pitchband and curve around the end pieces, holding them in place. Dents are perfectly even, since they rest against the metal half-round ribs. Extra long cornices are clinched and soldered full length. Back is of metal, as on all-metal reeds.

The other new reed, "Flexback" is claimed to have an entire inch of additional flexing distance, and the dents, Emmons says, will flex back quicker than in ordinary pitchband reed. In the construction, two metal strips run the whole length of the reed and the width of the wood ribs. The metal is between the dents and the wood ribs, and by preventing the dents from embedding in the wood, allows the greater flexibility.



Left, Flexback; right Semi-metal

◆

New Color

National Aniline & Chemical Company, Inc., 40 Rector St., New York City, has added to its line National Fast Light Rubine BL, an acid dye red of outstanding fastness to light. Qualities of the dye and instructions for handling are given on the usual color card with samples attached.

◆

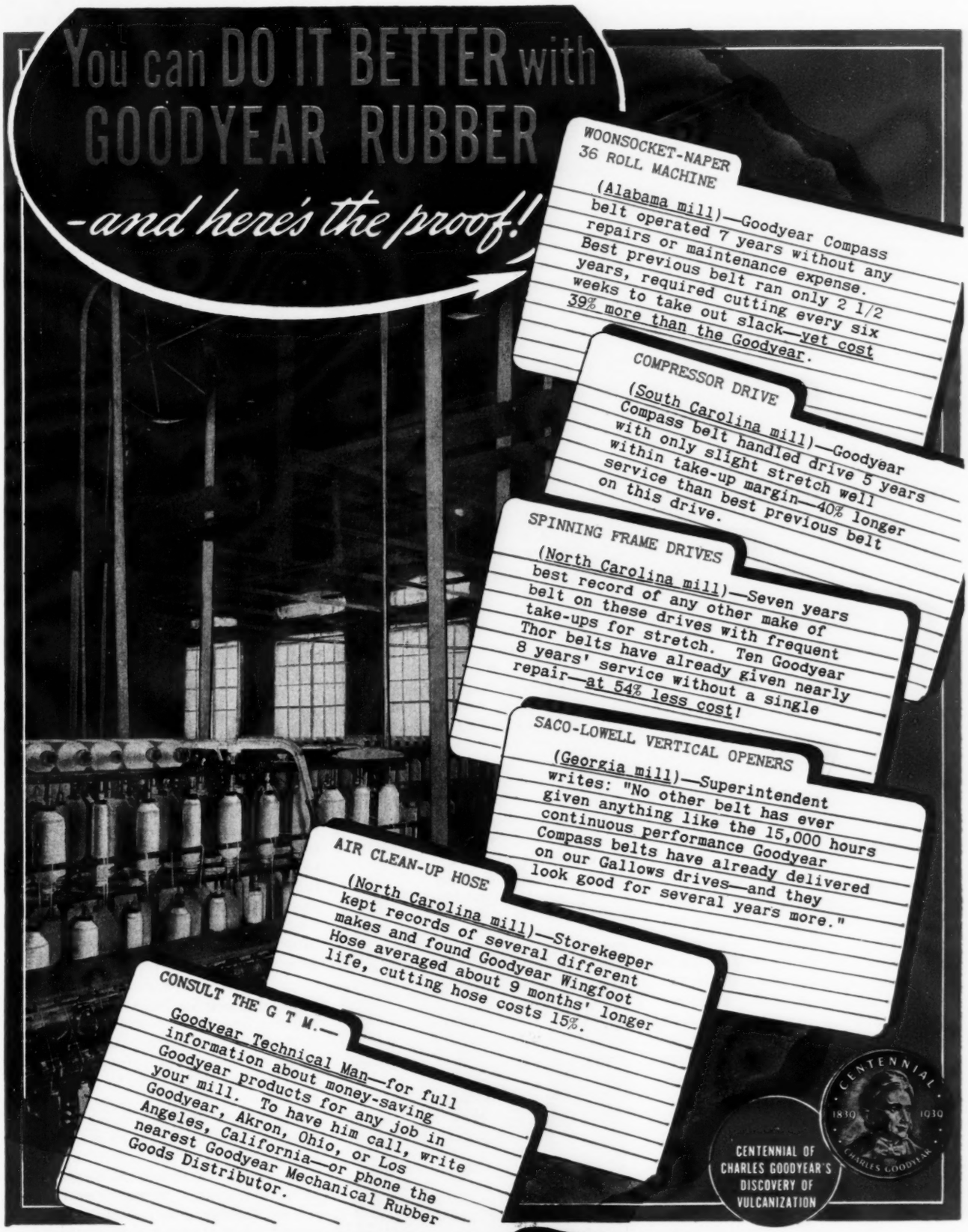
Mogul Pressure Jet Prevents Rust and Corrosion in Steam Lines

The North American Fibre Products Company, Keith Building, Cleveland, Ohio, has developed a new method of atomization which is said to assure positive action. It is a feeding device, the Mogul pressure jet, which eliminates rust, scale, corrosion, and conjestion in high or low pressure steam lines through atomization of their special eradicating fluid. The equipment consists of a housing containing a copper coil through which the special treating material is atomized and injected into the steam mains. Only two connections are made on the steam mains; the equipment is simple and easy to operate.

◆

Heavy-Duty Bench Grinder

Diehl Manufacturing Company, Elizabethport, N. J., has introduced a new heavy-duty bench grinder, termed the Deluxe. It is similar in construction to the standard heavy-duty type, but the addition of Diehl-Life and eyeshields extends the usefulness where direct lighting on the work and protection from flying particles is essential.


You can DO IT BETTER with GOODYEAR RUBBER
-and here's the proof!
WOONSOCKET-NAPER 36 ROLL MACHINE
(Alabama mill)—Goodyear Compass belt operated 7 years without any repairs or maintenance expense. Best previous belt ran only 2 1/2 years, required cutting every six weeks to take out slack—yet cost 39% more than the Goodyear.
COMPRESSOR DRIVE
(South Carolina mill)—Goodyear Compass belt handled drive 5 years with only slight stretch well within take-up margin—40% longer service than best previous belt on this drive.
SPINNING FRAME DRIVES
(North Carolina mill)—Seven years best record of any other make of belt on these drives with frequent take-ups for stretch. Ten Goodyear Thor belts have already given nearly 8 years' service without a single repair—at 54% less cost!
SACO-LOWELL VERTICAL OPENERS
(Georgia mill)—Superintendent writes: "No other belt has ever given anything like the 15,000 hours continuous performance Goodyear Compass belts have already delivered on our Gallows drives—and they look good for several years more."
AIR CLEAN-UP HOSE
(North Carolina mill)—Storekeeper kept records of several different makes and found Goodyear Wingfoot Hose averaged about 9 months' longer life, cutting hose costs 15%.
CONSULT THE G T M.—
Goodyear Technical Man—for full information about money-saving Goodyear products for any job in your mill. To have him call, write Goodyear, Akron, Ohio, or Los Angeles, California—or phone the nearest Goodyear Mechanical Rubber Goods Distributor.
CENTENNIAL
1830 1930
CHARLES GOODYEAR
CENTENNIAL OF CHARLES GOODYEAR'S DISCOVERY OF VULCANIZATION

THE GREATEST NAME IN RUBBER

GOODYEAR

BELTS · MOLDED GOODS HOSE · PACKING

Refined Conveyor Belt

United States Rubber Company, Mechanical Goods Division, 1790 Broadway, New York City, is designing conveyor belts with certain improvements to withstand unusually severe service conditions. This is accomplished by imbedding a special weave breaker strip fabric in a heavy layer of soft white gum. This layer is inserted next to the belt carcass as an integral part of the belt cover, and provides a shock absorbing cushion for the belt cover.

◆

Turbine of Flexible Design

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., has designed a turbine in the 100 to 2000 horsepower range, to be used by any type of industry using mechanical and electrical power. Through selection of proper number of stages, governor and control, the design is flexible enough to give maximum efficiency and reliability. The turbines give 1000 to 5500 r.p.m., and are for steam pressures up to 650 pounds, steam temperatures to 750 degrees F., exhaust pressures to 200 pounds, vacuum to 29 inches mercury, and extraction pressures to 200 pounds.

◆

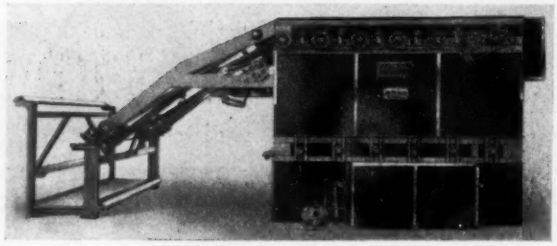
The Fleet Line Cloth Tenter Dryer

Riggs & Lombard Inc., Lowell, Mass., have developed a new fleet line cloth tenter dryer. An outstanding feature claimed for this new machine is that it saves approximately 23 per cent in floor space by utilizing vertical space, which is available without additional taxes or overhead. The machine operates as follows:

The cloth passes through the chamber in vertical loops (instead of in the customary horizontal loops) on a chain equipped with heat treated Monel pins. The loops form sealed pockets in alternate passes, into which the heated air is forced under slight pressure, passing through the cloth, removing the maximum amount of moisture and securing a 40 degree to 60 degree F. temperature drop. Heat is supplied by coils directly under the cloth and fans on both sides. After passing through the cloth the partially cooled air returns to the heater through the open pockets, passing down just inside the insulated sides, with a portion going to the exhaust.

Possibility of overdrying is eliminated by the arrangement of heating coils, which are distributed so that the greatest amount of heat is applied at the end where the cloth is the wettest. In other words graduated temperature zones are maintained.

Flexibility as to capacity with this machine is due to the fact that capacity can be readily increased simply by adding another section to its length. The smallest unit is designed for 4 passes with 11-yard holding capacity. If necessary, the machine can be extended almost indefinitely. The size of openings for air travel and the amount of air passing up through each vertical loop remains constant in any size of machine. For mills which lack sufficient head room to accommodate a vertical machine, a horizontal design is offered. The latter is really a vertical type machine tipped over on its side, having the same air circulation as the vertical type, only in a horizontal plane. It offers many of the advantages of the vertical machine, but is not so flexible as to capacity and takes up considerably more floor space. It is regularly built as a 6 pass unit, being 8 feet 3 inches overall in height and 35 feet overall in length.



Tenter Dryer

◆

Tool for Cutting Round Stock

The Billings & Spencer Company, Hartford, Conn., has a new cut-off tool for cutting drill rod and wire from 0 to ¼-inch round without leaving a burr. It is fast in action, easy to operate and requires little exertion. It is drop forged and finished in Duro.

◆

New Can Prevents Roving from Spilling

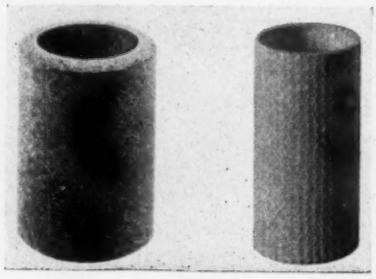
Continental-Diamond Fibre Company, Newark, Del., has made available a new fiber seamless roving can fitted with a fiber bail, which is slipped up over the roving in order to keep it from spilling when the can is moved. This bail is quite a new wrinkle in roving cans. The can itself is made of tough fiber and is a seamless shell. The metal top and bottom rims are rustproof plated and are so riveted that the can is smooth inside and out, with no danger of the roving catching on the rivet heads.

Roving Can

◆

Improved Cork Cot by Sonoco

Sonoco Products Company, Hartsville, S. C., have still further improved the reinforcing construction of their cork cots by the use of a seamless woven fabric tube. The tube forms the innerlining of the cork cushion and takes the strain of adhering to the steel roll off the cork. The woven fabric inner lining has a heavily gummed surface that freezes quickly to the wetted steel roll. The cork cushion being welded to the lining is thereby prevented from bulging or elongation while running and thus the original proper density of the cork is retained throughout its life. Tests and production runs have proved satisfactory in drafting all sizes of yarn with the new cork cots.



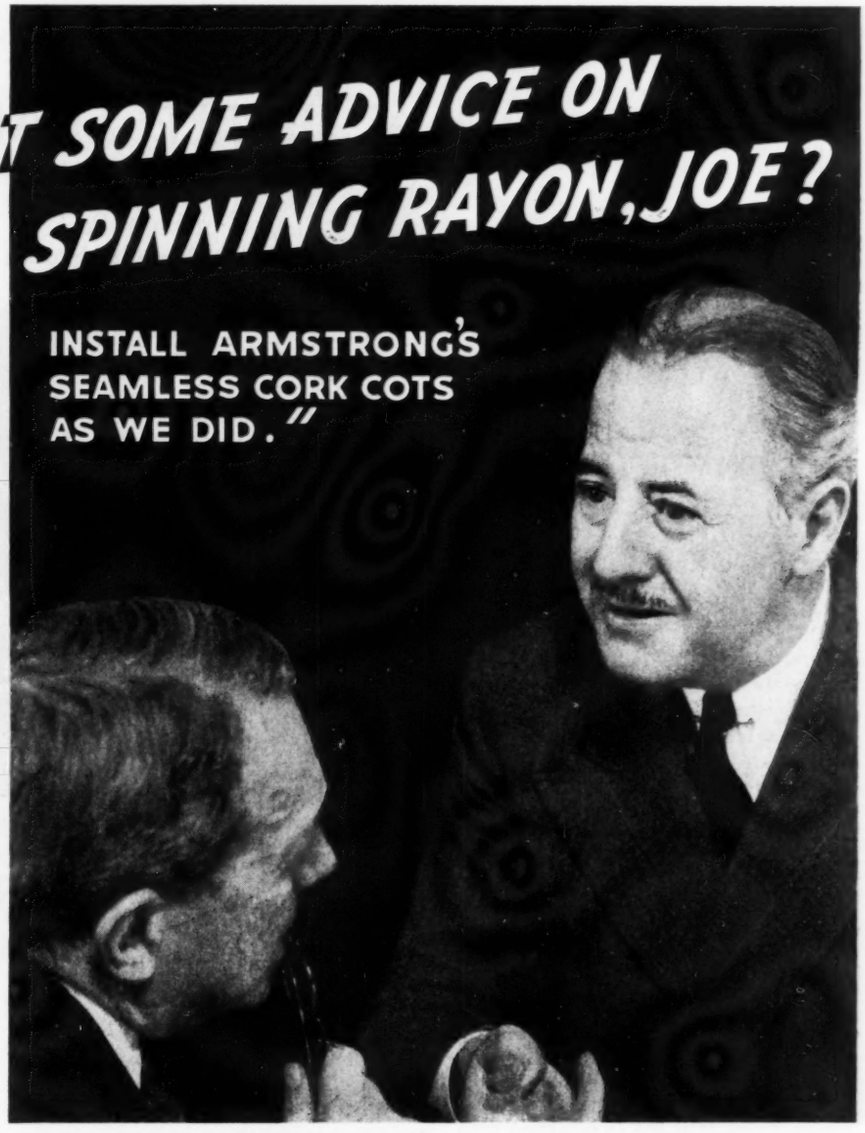
Fabric Reinforcement

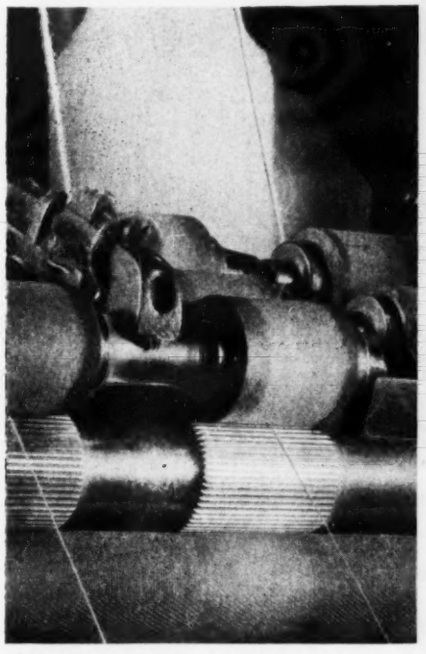
◆

New Edgelock Sewing Machine

Union Special Machine Company, 404 N. Franklin St., Chicago, Ill., has added to its line of high speed Edgelock machines the Style 43200 G, a machine for hemming overalls, jackets, and similar garments. It has a number of refinements which make it an economical and efficient unit for certain applications. Other machines developed and of especial interest to textile operators are the 52800H, a two-needle machine; 52800J for the second part of the two operation process of attaching garment length collarettes to knitted undergarments; and 52800K for attaching collarettes to knitted undergarments using a long length rib knit strip cut perpendicular or parallel to the wale, a 3-needle machine.

"SO YOU WANT SOME ADVICE ON SPINNING RAYON, JOE?





Rayon spinning calls for greater friction and extra durability in roll coverings. That's why today most staple rayon is being spun on cork.

"I'M not surprised you're having trouble running staple rayon and mixtures, Joe. We had plenty of headaches ourselves before we switched to cork.

"Armstrong's Cork Cots have two qualities that were just made to order for rayon. For one thing, cork has greater friction than other materials. That makes the drafting more uniform with a minimum of slippage. And since cork grips better, it drafts out bulky roving that other roll coverings won't handle.

"Now for the other cork cot quality that'll help you in running rayon. Being more wiry than cotton, staple rayon is hard on rolls—that is, on *ordinary* rolls. But *cork* rolls can take it—and when they *do* wear you can make them good as new, three or four times, by rebuffing. The cost of rebuffing's very small, too—only about half a cent a roll!

Visit the
ARMSTRONG EXHIBIT
Booth No. 140 First Floor
Southern Textile Exposition
Greenville, S. C.—April 3-8

"Of course, Joe, with these cork cots you'll also benefit from such things as less eyebrowing and end breakage, less clearer waste, and fewer top roll laps—and these rolls, I think you'll find, are affected less by hard ends.

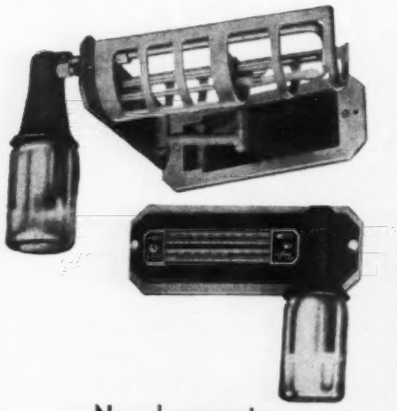
"Don't take my word for it—or depend upon my figures alone. Get hold of an Armstrong man. Let him tell you how a complete change-over to cork will cut your roll covering costs by 50% or more, and how the assembly is quicker, cheaper than with other materials. He can show you figures from a lot of mills." Write to Armstrong Cork Company, Industrial Division, Textile Products Section, 923 Arch Street, Lancaster, Penna.

ARMSTRONG'S *Extra Cushion* SEAMLESS CORK COTS

CORK PRODUCTS SINCE 1860

New Taylor Hygrometer

Taylor Instrument Companies, Rochester, N. Y., have developed the new 10BG hygrometer, especially adapted for use on air conditioning supply and return ducts, raw woolen stock dryers, cotton, wool, and rayon cloth and yarn



New hygrometer

dryers, as well as other closed compartments where humidity plays such an important role. It is a wet-and-dry bulb instrument. The flat tube scales are mounted horizontally for easy reading. Rubber grommets insulate the thermometer stems and bulbs from all metal parts.

◆

Two New Lighting Units

Macbeth Daylighting Corporation, 227-239 West 17th Street, New York City, has perfected two new lighting units. The first is an air-cooled color-matching skylight unit affording a two variant illumination which provides diffused north sky daylight as well as horizon sunlight over large areas. The specially designed box is equipped with a motor-operated blower so that the excess heat is removed from the working area. It is recommended for industries where glare is to be avoided in inspecting silks, cottons, rayons, wools, etc. Matches of known materials built up under the daylight illumination can be checked under the horizon sunlight illumination. When materials match the standard under both lights a complete match is assured which will hold under any daylight or artificial light.

Another light recently perfected is the Artday 36 fluorescent lamp for use in cases not requiring the absolute accuracy afforded by the color matching units. It is used for general daylight illumination.

◆

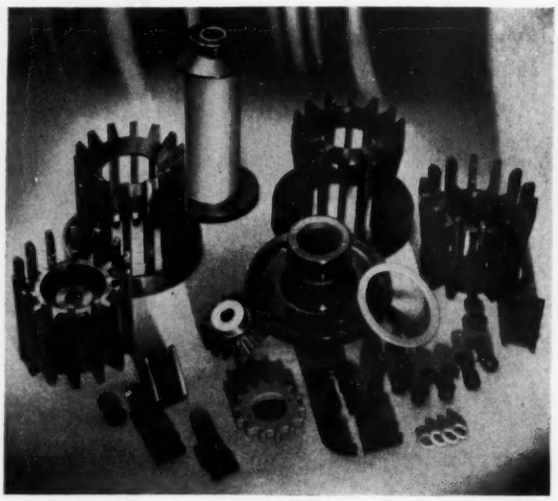
Breen Represents Philadelphia Drying Machinery Co.

Albert R. Breen, 80 E. Jackson Boulevard, Chicago, Ill., has become representative in the Mid-West territory for the Philadelphia Drying Machinery Company, Philadelphia, Pa.

TIMELY NEWS ITEMS WITH A TEXTILE SLANT . . . .

Plastics Play Important Part in Industrial Rayon Corporation's New Continuous Spinning Plant

R. F. Bergmann, chief engineer of the Rayon Machinery Corporation, a wholly-owned subsidiary of the Industrial Rayon Corporation, recently pointed out the important part played by plastics in the development of the new Industrial continuous spinning rayon plant located at Painesville, Ohio, when he said, "The process itself, made possible by an ingenious, highly developed reel composed of chemically resistant molded plastic members, is the result of years of experimental and development work."



Courtesy The Richardson Company

Group of molded and laminated parts, including jet unions, thread guide holders, brackets, seal rings, washers, gears, etc.

The illustrated story of the new plant and its operation was carried on page 72 of the December 1938 issue of COTTON.

The new process combines into one continuous series of operations all steps from spinning to drying and twisting the yarn on bobbins, made possible by the development of an inclined processing panel equipped with plastic reels. In addition to the reels numerous other plastics molded and laminated are used throughout the plant.

The plastic equipment was furnished by The Richardson Company, Cincinnati, Ohio.

◆

Textile Story in "Shell Progress"

The January issue of *Shell Progress*, monthly organ published by the Shell Union Oil Corporation, carries an interesting story showing the fact that textiles are not just an ordinary industry, but a prime requirement of human life. Some of the factors pointed out are that textiles are the largest industry in number of employees and amount of wages in America, second only to food in number of establishments and the care of raw material and in the value of the first product.

The biography follows the progress of the industry from the invention of spinning by roller in 1769 to the present day modern high speed machines. The story is profusely illustrated from scenes in the manufacturing division of Marshall Field & Company's mills in and around Spray, N. C.

◆

Reorganization Policy of Pacific Mills

Alfred E. Colby, president of Pacific Mills, has announced the separation of the company's business into three major sections, each with an operating head. This is in line with a policy of segregating the business as to classes of merchandise, manufacturing units, and operating responsibilities. To provide for co-ordination of the merchandising, manufacturing and selling functions, the operating head in charge will be responsible for all activities pertaining to the business of the section.

E. D. Walen, general manager, will continue as operating head of the worsted and woolen section with mills at Lawrence, Mass.

H. G. Nichols, vice-president, has been appointed operating head of the northern cotton and rayon section, with all rayon and specialty cotton business now assigned to the mills at Lawrence, Mass., and Dover, N. J. Mr. Nichols will continue to make his headquarters in Boston.

H. G. Simonds, vice-president, has

Said This Large Woolen Manufacturer . . .

"Let's See What Happens If We

Turn off the Amco Humidification!"

A well-known woolen manufacturer wanted the figures on benefits his engineered Amco Humidification System was bringing to his mill . . . He made comparative tests with the system off and the system on. Here are *his own* figures.

Without AMCO Humidification

AVERAGE YARN YIELD FROM STOCK DROPPED	3½ LBS. PER 100
PERCENTAGE OF WASTE INCREASED	5.06%
IN CARDING	29.6 %
IN SPINNING	5.2 %
IN DRESSING	5.7 %
IN WEAVING	

BUT THAT'S ONLY PART OF THE STORY . . . "Monday morning . . . used to take 2 or 3 hours to get steadied down to normal conditions. Today we resume operations with practically no period of transition . . . Definite increase in spinning, dressing, weaving efficiency . . . Less variation from winter to summer and from day to day in roping, yarn, cloth weights . . ."

It's easy to figure *your* savings from facts like these. Every Amco installation is planned to fit the physical characteristics of a particular mill, and the type of material being processed. There is no temptation for an Amco engineer to "get by" with makeshifts. From the wide line of Amco equipment, he can meet any mill condition with a device exactly suited to the job.

Thus, since 1888, Amco has assured Adequate Humidification — a maintained supply of "money-making air" to meet normal and emergency conditions in every textile process. American Moistening Company, Providence, R. I. . . . Boston . . . Atlanta . . . Charlotte.

AMCO HUMIDIFICATION

TAKE YOUR HUMIDIFICATION JOB TO THE HUMIDIFICATION SPECIALIST

been made operating head of the southern cotton section, with all staple cotton business now assigned to the mills and finishing plants at Columbia, S. C., and Lyman, S. C. Mr. Simonds will continue to make his headquarters in Boston.

Irving Southworth, agent of the northern and southern units on cotton and rayons, will continue in charge of manufacturing operations, and New York sales and merchandise division managers of cottons and rayons will continue as at present.

◆

Hubert Watson Now Sales Head of Watson-Williams

Hubert J. Watson, treasurer of Watson-Williams Mfg. Co., Leicester and Millbury, Mass., manufacturers of shuttles, heddle frames, heddles and cards, has been elected sales manager of the company to succeed Clifton E. Watson, who has resigned as vice-president and general manager of the company. Production will be continued in charge of Wilbur L. Watson, president and assistant treasurer. Philip L. Spencer continues as superintendent.

H. J. Watson

Watson-Williams sales representatives remain the same: G. C. Burbank, Worcester, Mass.; W. F. Daboll, Providence, R. I.; D. C. Ragan, High Point, N. C.; and E. V. Wilson, Greenville, South Carolina.

Clifton E. Watson, who has resigned from the company, has been general manager for 17 years, entering the company upon graduation from Dartmouth College in 1922. He has not made known his plans, but it is understood he will continue in the same line of business.

◆

American Viscose Expands Sales Development Department

American Viscose Corporation has expanded its sales development department through the appointment of F. G. Carroll and F. C. Wedler to the technical staff to work with mills using rayon and spun rayon. This move enlarges the sales development department, which is now headed by E. S. Kennedy. Organization of the department is as follows:

K. M. Currier, assistant manager; H. B. Garden, acetate division, technical work, including warping, slashing, throwing, coning, weaving, etc.; P. W. Brown, assistant to Mr. Garden; J. A. Webber, viscose division; F. G. Carroll, staple fiber division; and F. C. Wedler, dyeing and finishing of all fabrics.

Mr. Carroll formerly was with Judson Mills, Greenville, S. C., and Mr. Wedler served in the sales department of the dyestuff division of E. I. Du Pont de Nemours & Co., Inc.

◆

Sargent Now Represents Laurel Soap

W. R. Sargent has recently been appointed sales representative for Laurel Soap Mfg. Co., Inc., Philadelphia, manufacturers of textile soaps, oils and finishes. He will work in conjunction with A. Henry Gaede whose headquarters are in Charlotte, N. C. Mr. Sargent, whose home is in Greenville, S. C., has had a number of years of practical mill experience in the South, and will cover eastern South Carolina, Georgia, Alabama, and part of Tennessee, with warehouse stocks available at Charlotte, N. C., and Chattanooga, Tenn.

◆

Bohannon Joins American Aniline

Joe T. Bohannon, Jr., formerly connected with the International Salt Company, has become sales and service representative for the American Aniline Products, Inc., Charlotte, N. C. He will be located in the Chattanooga, Tenn., territory. Mr. Bohannon is a graduate of the Alabama Polytechnic Institute with a degree in textile engineering and has had practical experience in the dyeing and finishing department of Stonecutter Mills, Spindale, N. C.

◆

DePass Joins Aridye Corp.

William B. DePass, graduate of Clemson (S. C.) College, and formerly connected with the Southern Bleachery & Print Works, Taylors, S. C., has joined the Aridye Corporation as southern service representative. He will work with Chester M. Robbins, who is in charge of sales, with headquarters in Greenville, S. C.

◆

Steering Committee Meets

The Steering Committee on Research for Testing Textile Finishes of the American Society for Testing Materials held a meeting of subscribers to its research fund January 26, at the Chemists Club in New York City. At the meeting arrangements were made for undertaking the Committee's research program which will be carried out by a research associate to be appointed shortly.

The Steering Committee was organized in May 1938 under the sponsorship of Committee D-13 on Textile Materials of the American Society for Testing Materials. L. B. Arnold, Jr. is Chairman, and E. A. Georgi is Secretary of the Steering Committee. The object in organizing the research program of this committee was to establish definite physical testing methods which would supplant the empirical methods now generally used in the textile industry.

The subscribers to the research fund to date are: American Viscose Corporation, E. I. Du Pont de Nemours & Company, Inc.; The Hart Products Corporation, Hercules Powder Co., Providence Dry-Salters Division; National Oil Products Company, Inc.; Sandoz Chemical Works, Inc.; Scholler Brothers; Sears-Roebuck & Co.; Tubize Chatillon Corporation.

◆

New Publications of Textile Interest

CHICAGO WHEEL AND MANUFACTURING COMPANY, 1101 West Monroe St., Chicago, Ill. Catalog on the Handee tool of 1001 uses, a tool that does away with hand work. It grinds, drills, cuts, carves, etc.

WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, East Pittsburgh, Pa. Instruction leaflet 2806 on the type L-33 electrical interlock for alternating current.

LINK-BELT COMPANY, 307 N. Michigan Ave., Chicago, Ill. Picture book on overhead conveyors for handling materials in various industries.

REVOLVATOR COMPANY, North Bergen, N. J. Bulletin 95F descriptive of the company's stationary elevators.

SCHEUER & COMPANY, 72 Leonard St., New York City. 1938 edition of Comparative Textile Chart, showing price history of 64x60 38½-inch 5.35 cloth, covering years 1926-38; prices, raw material costs, and mill margins of two staple rayon constructions; total annual production and consumption of U. S. on cotton cloth, rayon yarn, and rayon staple fiber.

DIEHL MANUFACTURING COMPANY, Elizabethport, N. J. New motor price list and Catalog No. 39, containing wealth of useful information and application data on motors, generators, ventilating equipment, grinders, etc.

DITTO, INC., Harrison at Oakley Boulevard, Chicago. Four pamphlets describing the Ditto payroll method, the Stromberg-Ditto payroll plan, the Ditto summary master payroll plan, and the Ditto unit master payroll plan.

WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, East Pittsburgh, Pa. Several publications issued recently. Pamphlet No. B2131 stressing low installation and operating costs and safety of the company's combination linestarters.

Catalog section 4/7-225 on feeder-voltage boosters, giving complete information on the type BR two-step feeder voltage boosters, particularly applicable to rural lines or distribution circuits where the load changes once or twice daily from very light to nearly full load.

Descriptive data 3620 on gearmotors, self-contained drives consisting of a high speed motor and necessary speed reducing unit.

Folder No. B2175 on steam drive power, descriptive of the Type M turbine, a general purpose turbine for economical steam drives for all industries.

THE SWARTZBAUGH MANUFACTURING COMPANY, Toledo, Ohio. A folder descriptive of the "rolling cafeteria", termed Ideal Conveyor, for serving food and drink to employees while on the job.

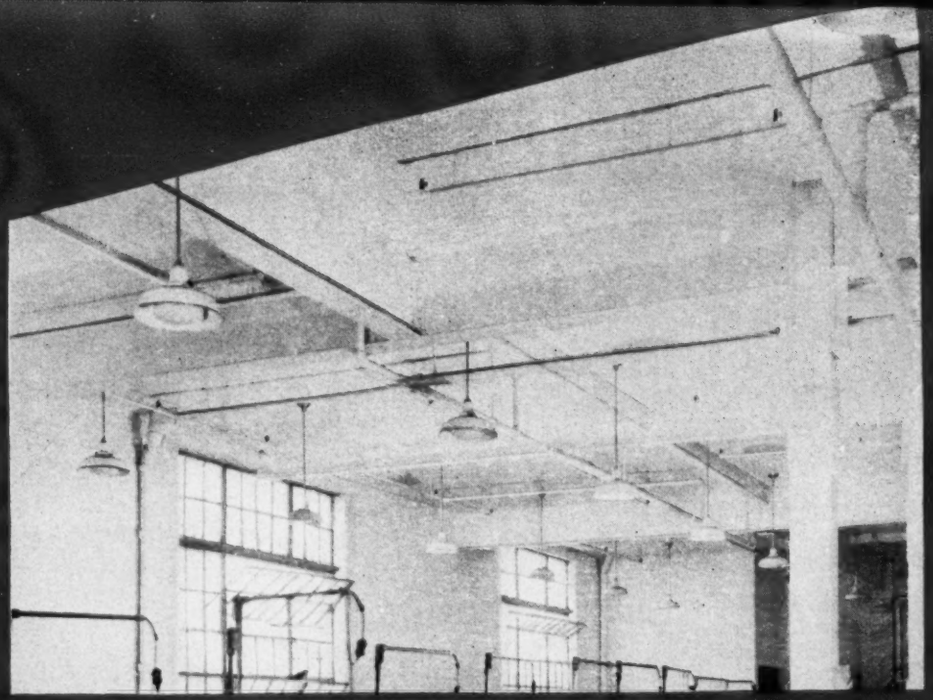
S K F INDUSTRIES, INC., Front Street and Erie Avenue, Philadelphia, Pa. "S K F in the Cotton Mills", showing the application of anti-friction bearings on all types of cotton mill machinery.

S K F engineering data sheets, illustrating and giving specifications for various anti-friction bearings.

S K F ball bearing for fan and blower boxes.

S K F ball and roller bearing transmission appliances, showing a complete line of transmission appliances.

Look at your CEILINGS and WALLS!



Are they playing their part in your Plant's Light Conditioning?

You "light condition" to save money... to speed up work, heighten morale, cut down errors, lower production costs. But is your plant truly, economically light conditioned? It can't be if your ceilings and walls are dull and dingy ... unpainted absorbers of light!

To make the most of both free daylight and the artificial light you pay for—your first step in light conditioning your plant is white paint. To get the most in highest light reflection, longest-lasting whiteness under the most "difficult" paint conditions in your plant—the white paint you need is Sherwin-Williams Save-Lite!

There's a Save-Lite specially formulated for your plant and the conditions under which it operates. The Sherwin-Williams painting technician will tell you exactly which Save-Lite you need and where in your plant you need it. Let him make a survey. There will be no obligation. Or write for the free Sherwin-Williams "Plant Conditioning Report". Address the Sherwin-Williams Company, Cleveland, Ohio, and all principal cities.

SEE THE SHERWIN-WILLIAMS PAINTING TECHNICIAN

SHERWIN-WILLIAMS SAVE-LITE THE PLANT CONDITIONING PAINT

PERSONAL NOTES
about Men You Know

E. ALLEN BENTLEY has become overseer of carding and J. P. CLARK has been promoted to overseer of finishing at the Swift Manufacturing Company, Columbus, Ga.

JOHN S. MANN, graduate of Alabama Polytechnic Institute, has become production manager and assistant overseer of the cloth room, Callaway Mills, Manchester, Ga.

J. P. CHILDERS has been promoted from secondhand to overseer of spinning at the Greenwood (S.C.) Cotton Mill.

AARON L. TAYLOR has been made overseer of weaving at the Columbus (Ga.) Manufacturing Company.

CHARLES E. LOTTE has succeeded the late CHARLES L. AUGER, SR., as president of the National Dyeing & Printing Company. IRVIN A. POST, formerly secretary, becomes treasurer, succeeding Mr. Lotte.

LANIER BRANSON, who has resigned as president of the Graniteville (S.C.) Manufacturing Company and the Sibley-Enterprise Manufacturing Company, Augusta, Ga., will organize his own company, which will manufacture textile specialties.

W. L. BRANTLY has been made superintendent of the Mobile Cotton Mills, McComb, Miss., succeeding S. W. ARMITAGE, resigned.

J. W. TERRY, Sherbrooke, Quebec, Canada, has been elected president of the Sheer Silk Hosiery Company.

JULIUS PLUCKER, JR., has become resident manager in charge of all operations at the National Dyeing & Printing Company's plant, Williamsport, Pa.

R. H. WALKER, formerly president and treasurer of the High Point (N.C.) Cotton Mills, has become vice-president and sales manager of these plants.

M. W. WALKER, who has been connected with the Harriman (Tenn.) Hosiery Mills for more than 20 years, has been made president of the company, succeeding the late TOM TARWATER, who, as recorded, passed away early in December.

A. J. MORSE, formerly of Newark, N. J., will be in charge of operations, including dyeing, at the North Georgia Processing Company, Toccoa, Ga. His assistant will be HENRY G. BARTOL, JR., who has been at the plant for some time, in charge of operations in the absence of Mr. Morse, who spent much time in the East. E. C. SHAW has been named as superintendent of the mechanical department of the new bleachery which is being built as an addition to this company, which is a subsidiary of the Clark Thread Company. Austell, Ga.

MIKE P. HARRIS, formerly connected with the Clark Thread Company, Clarkdale, Ga., has accepted the position of general overseer of the second shift at the Banning (Ga.) Mills.

JOSEPH G. SHEDD, formerly with the U. S. Rubber Products, Inc., at both the Winnsboro (S.C.) plant and the Shelbyville (Tenn.) plant, has become assistant overseer of spinning at The American Thread Company, Dalton, Ga., of which JULIAN M. LONGLEY is general manager.

FREDERICK P. JECUSCO, formerly sales and general manager of the Chatham Manufacturing Company, has been appointed manager of the mechanical fabrics division of the U. S. Rubber Company, Providence, R. I.

J. S. SMITHERMAN has become superintendent of the A. Leon Capel Mill, Troy, N. C., makers of braided and woven chenille rugs and rope, succeeding G. G. SMITH, resigned.

H. H. LORD has resigned as president of the Edgewood Textile Mills, Inc., which have the main offices in Chicago (Ill.) Heights.

HAROLD WILLIAMS, textile graduate of the New Bedford (Mass.) Textile School, has resigned as technician at the Security Mills, Newton, Mass., to join the staff of technicians at the Barbour Mills, Brockton, Mass. He is succeeded at Security Mills by SIDNEY G. SMITH, JR., also a graduate of the New Bedford Textile School.

JAMES DOLPHIN, Maryville, N. B., Canada, has become superintendent of the Ontario Mills, Canadian Cottons, Ltd., Hamilton, Ontario. He is a graduate of the N. C. State College textile school.

HUGH S. OWEN, textile graduate of the Alabama Polytechnic Institute, and formerly associated with the Cowikee Mills, Eufaula, Ala., is now with the Geneva (Ala.) Cotton Mills.

E. G. JONES, formerly with the Gloria Rayon Mills, Johnson City, Tenn., has become associated with Sears Roebuck & Co., in the cloth department at Memphis, Tenn. He is a textile graduate of the Alabama Polytechnic Institute.

Obituary

GEORGE W. GOUDY, general representative, foreign manager, and director of the Philadelphia (Pa.) Quartz Company, passed away February 7 at the age of 69 at his home in Highland, Ulster County, N. Y. He had been associated with the company for over 40 years.

ADOLPH SCHOLLER, vice-president and treasurer, Scholler Brothers, Inc., Philadelphia, Pa., passed away on Sunday, February 12.

JOHN O. MCKEAN, 68, president of Foster Machine Co., Westfield, Mass., passed away on February 27, after an emergency operation following a week's illness.

ARTHUR A. TIFFANY, president, Vermont Spool & Bobbin Company, Burlington, Vermont, passed away suddenly early in February of pneumonia. He was 65 years old.

WILLIAM CLEMENT MABBLE, 77, vice-president, secretary, and director of the Curtis & Marble Machine Company, Worcester, Mass., passed away January 23. He had been active in business until last October. He was widely recognized as a leader in his community in religious and civic organizations.

JAMES E. STANTON, JR., 75, president of the Hathaway Manufacturing Company, and prominent for many years in the textile affairs of New Bedford, Mass., passed away the latter part of January at his home in South Dartmouth.

S. H. MARSHALL, 65, manager and treasurer of the Morehead Cotton Mills Company, Spray, N. C., passed away of a heart attack the middle of January.

At the Southern Textile Exposition

BARBER-COLMAN

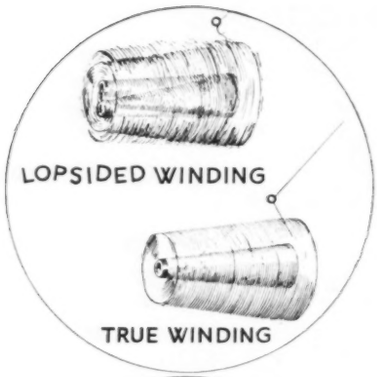
will have in Operation . . .

1. **Warp Drawing Machine**
   —*Drawing flat steel heddles*
2. **Portable Warp Tying Machine**
   —*For tying cotton, rayon and silk*
3. **Automatic Spooler and Super Speed Warper**
   —*Spooler equipped with improved and quick adjusting yarn cleaners*
4. **Milling Cutters and Gear Hobs**
   —*For cotton mill machine shops*
5. **Temperature and Humidity Controls**
   —*Automatic electric systems for mill installations*

You are cordially invited to Visit our Booth

IN SPACES **247, 248, 249** SECOND FLOOR

GREENVILLE, S. C., April 3rd-8th, 1939

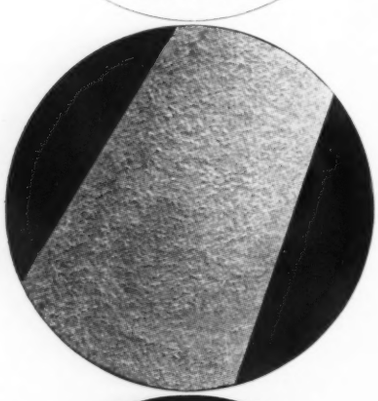


FITS THE MANDREL SNUG

Running level and true on the winding mandrel, the SONOCO Cone builds-up a sound yarn package . . because it fits.

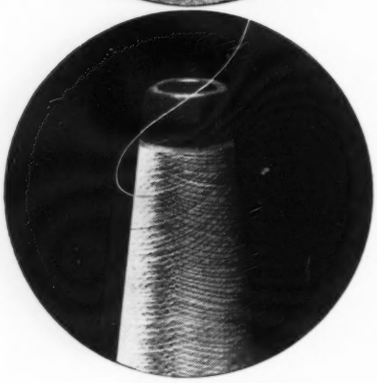
STOPS AT SAME POSITION

Secret of efficient winding is the stop position at which the cone fits tight on the mandrel. Hair-line accuracy is necessary, that the yarn wind on the cone in a uniform position.



HOLDS YARN FIRM

The Velvet Surface holds firm the finest count yarns as they are laid on in the primary winding—foundation of the perfect package.



DELIVERS FREELY

No hanging or breaking of yarn as it flows over the nose—machined to mirror-like smoothness.

DETAILS

. . . don't amount to much separately, and as long as they don't go wrong . .

Construction points of a SONOCO Cone are minor details but—let any of them fail—once in a thousand times—and see how fast mistakes, delays, worries, seconds and costs pile up.

That is why SONOCO Cones are a product of scientific laboratory control in every step of their manufacture, from pulp to finish . . . why all SONOCO products are made under most modern conditions, by especially designed precision machinery.

SOUTHERN TEXTILE EXPOSITION
Greenville, S. C. . . . . Booth 103

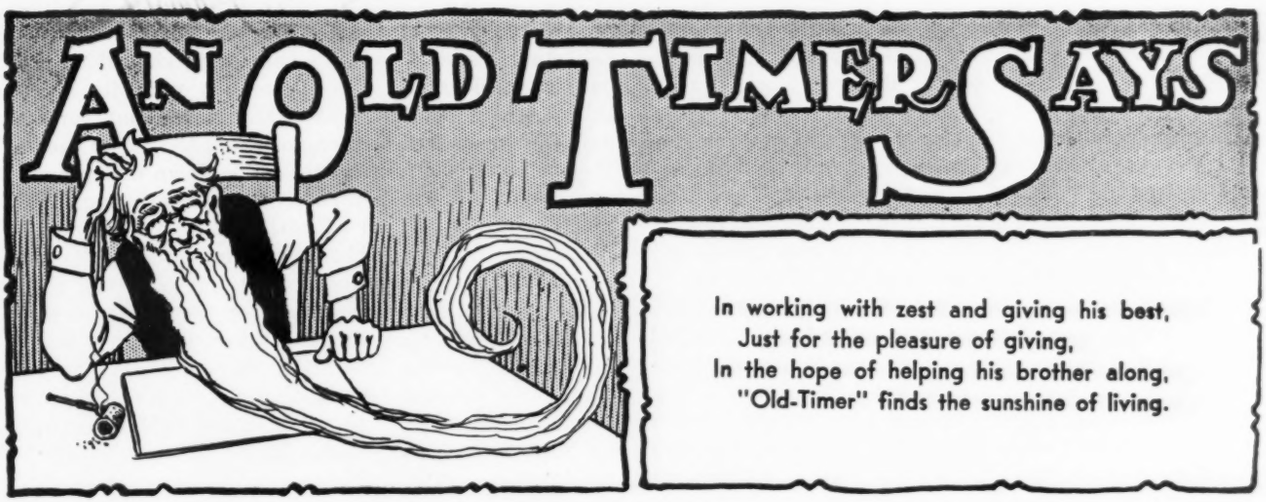
KNITTING ARTS EXHIBITION
Philadelphia . . Booths 96-97-98-99

SONOCO MAKES *EVERYTHING* IN *PAPER CARRIERS*

SONOCO PRODUCTS COMPANY

BRANTFORD ONT. | HARTSVILLE S. C. | MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

You Are Slipping If—

IF YOU can't see the job as a whole. Superintendents who were overseers of weaving are inclined to favor the weaving department—they are inclined to listen to the overseer of weaving more than to the other overseers. This reasoning also applies to each overseer. It is hard for him to realize the other overseers' problems and he wants everything done the way he sees it from his department's standpoint.

IF YOU can't put aside petty prejudices. In fact, the old overseers and superintendents usually rate better on this point than the younger men do, because they have had more of that wonderful schooling called experience.

IF YOU can't say No and not have to keep up the pretense of knowing more than you do.

IF YOU can't refrain from getting into petty quarrels with your associates and especially with your employees or subordinates.

IF YOU can't make new friends.

IF YOU are growing more and more selfish in your associations with your co-workers—with your employer (expecting more favors from him) or in your personal affairs at home.

IF YOU are beginning to find life rather dull.

IF YOU think people are growing more dishonest and meaner than they used to be—

Brother, you are not just slipping. You are growing old pretty darn fast. Most people seem to take it for granted that as a man's body grows old he is also growing old mentally, whereas if they would only stop to look around them they would see just the reverse. What age are the men you know who have the best jobs, not only the most responsible ones, but the most lucrative ones? What age are the men in your community who are the most successful business men? Had you thought to look at it that way

No, brother, don't begin to make excuses for yourself that you are getting old—of course if your job is shoveling coal or digging ditches or lifting lumber or some other physical activity, you do have some excuse for saying you are getting old—but as a mill overseer or superintendent or president or any other kind of executive, the thing which makes you efficient should be younger, that is, it should be more capable of running the job than it was 10 or 15 years ago.

I am referring to your brain—your knowledge. You know, there never has been a container of any kind, made by man, which could not be filled up. You can fill up a barrel, you can fill up a hogshead, you can fill up a large tank, you can fill up a reservoir or dam holding millions upon millions of gallons of water—but, by cracky, you can't fill up a human brain. And the strange fact is that the more knowledge you put into that brain the greater its capacity is—it just gets bigger and bigger as you add experience and more experience to it. Now laugh that off.

In the face of this indisputable fact, how in Sam Hill can any man argue that a 35-year old brain is more efficient or worth more dollars in salary than a 50-year-old brain? One more illustration: Can anyone find an ounce of argument against the statement that out of 100 high executive jobs, or 1000, or 10,000, in any profession, let it be the steel industry, the mercantile business, the cotton mill industry, the medical profession, politics, or anything you can name where brains are paid for—that the 50-year-old brains don't bring more than the 35-year-old brains?

Hold on now, Mr. Fifty-Year-Old, before you get all pepped up. You must take stock of yourself to determine whether you are in the class of the 50-year-olds we are referring to, because just as sure as death and taxes, you are slipping if you are not in that class and that is why OLD-TIMER is trying to arouse your curiosity in yourself, so that you will get right down to brass tacks and realize that you don't get paid for your good looks, you don't get paid for being always on the job, nor for your honesty, nor your willingness to work, *because those things are taken for granted.* Most anybody can qualify along these lines and most anybody can draw an average salary for those qualifications. Therefore you have got to do something in addition to these qualifications which are taken for granted. How about turning something into a profit for your firm which is now showing a loss? A very

little idea sometimes will add up to quite a large pile of money over a period of months or years. One more inch of cloth per hour or per day per loom, for instance.

I never will forget one time I saw a loom fixer stop a loom where the shuttle was bouncing a little, but not enough to slam off. He looked at the loom and decided to go to his work bench for something; he laid a wrench on the loom to prevent the weaver from starting it up while he was gone. I picked up the wrench, started the loom up, and put a pencil mark at the fell of the cloth. When I saw him coming back I stopped the loom and laid his wrench back on the cloth. When he arrived I explained to him that I had woven nearly two inches of cloth while he was gone. Then I asked him if he could realize that there was there now two inches of cloth in the world that never would have been in the world if I had not started that loom up while he was gone. It matters not how many millions or billions of yards of cloth that all the looms in the world make as long as the world stands. I put two inches more cloth into the world that never would have been there.

That loom fixer turned out to be one of the best men in the mill—he is today the manager of a mill and his salary was eight thousand dollars the last time I heard from him.

Litte ideas, fellows, sometimes mean big things. How about looking around a little on your job?

Referring again to that wonderful thing called the brain. I recently read some observations quoted from Dr. Alex Hrdlicka, who is curator of Physical Anthropology at the Smithsonian Institution in Washington. He said, "The human brain actually keeps on growing until the age of 50 or 60." The only "if" he adds to that statement is that the person must be "mentally active". To quote this article further, "Innumerable tests have been conducted to determine at what age the brain is at its best, and these tests have been tried on various types and classes, with simple problems and with problems that would make Einstein take a grip on himself. (By the way, I had lunch in a hotel in Greenville, S. C., last Sunday and the waitress told me the man with his wife and child sitting a few tables away was the same Dr. Einstein's son and that he lived there. I did not confirm this but supposed the waitress knew what she was talking about.) There is no evidence whatever to show that the young man can solve a problem any more satisfactorily than an old man. In some cases the young men were quicker but on plain deduction, the very process of thought, the root of the matter, why Dad has it on them. The most surprising angle of all is that this is true in the matter of learning a language. It has always been believed that the time to learn a language is while you are young. So often you have heard people say 'I am too old to learn a language' but there is no truth in that. An old person can learn a language just as successfully as a young person. In some ways he may even excel the young sprout."

Of course all the learned doctor has said about a human brain applies to human brains in the textile business just as much as it applies to brains in any other business.

O. K., now, you fellows who think because you are over 35 you are all washed-up, can take on new life and start burning some of that midnight oil to prepare yourselves for that better job with its larger salary which you have been thinking about for the past few years but decided you were too old to tackle. If you have the backbone to buckle down and prepare yourself, if you are man enough to carry through with that resolution instead of letting it go the way most resolutions do go, well, if the eminent doctor is correct in his deductions, and he certainly could not allow such statements to be printed for the world to read unless he could back them up, then you have no excuse for not going after that bigger job unless you are simply coward (that's an ugly word) enough to admit you haven't got the guts to put forth the effort.

Start using your head. To do this you've got to get into the habit of thinking. You know in the textile business as well as all other businesses there are men who think ahead, and they are usually the ones who are ahead with the salaries. Others never seem to visualize the future at all and are never ready for anything until it happens—then everything is delayed while they are getting ready.

As OLD-TIMER has repeatedly pointed out to you, it is not absolutely necessary to have a college education in order to reach the top. That is, of course, if you will apply yourself diligently to home study. Think of the numerous men who are not college graduates but who have been so out-standing in their success that colleges have conferred college degrees upon them. All of these things are stated to prove to you fellows that there is a chance for you to achieve that goal you have dreamed of if—

And that "if" is not nearly so impossible as most people think it is. After all, you must make up your mind. Then if you are strong enough to follow up on what you have made up your mind to do, you will go places.

Remember about the study course which OLD-TIMER has been offering to young men—well, it is just as good a course for the man of 50. The editor of COTTON will tell you about it if you are interested.

Helping the New Employee

Once we were all new employees. Most of us can remember some thoughtful man who took a kindly interest in us when he saw how "green" we were, and who helped us to get acquainted, put us next to the "tricks" of the trade.

He was considerate and patient, and had a knack of giving advice without making a fellow feel uncomfortable; but he was no "softie." Very likely he remembered his own embarrassment when he had been put to work in a "sink or swim" fashion.

Those might have been "good old days" as some folks like to call them; but we know, too, that it was a case of every man for himself and let accidents take the hindmost.

Today we would like to be able to thank that old friend again and tell him how much we appreciate what he did for us. We can't do that; but there are new employees coming into these shops from time to time, and we have the opportunity to show the kind of stuff we are made of.

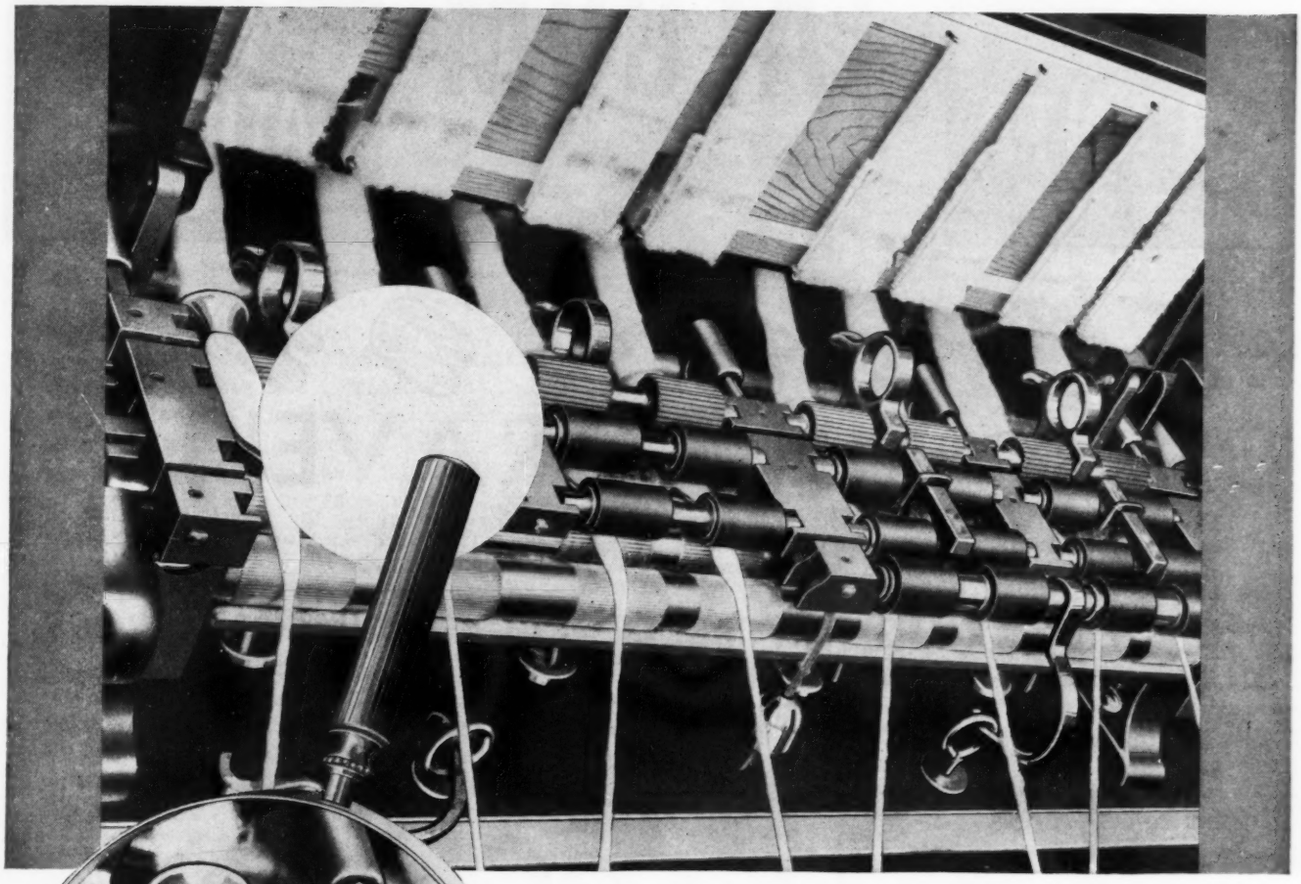
We can make friends with them, acquaint them with safe practices, and above all, help them to understand why safety is an important part of every job we undertake.

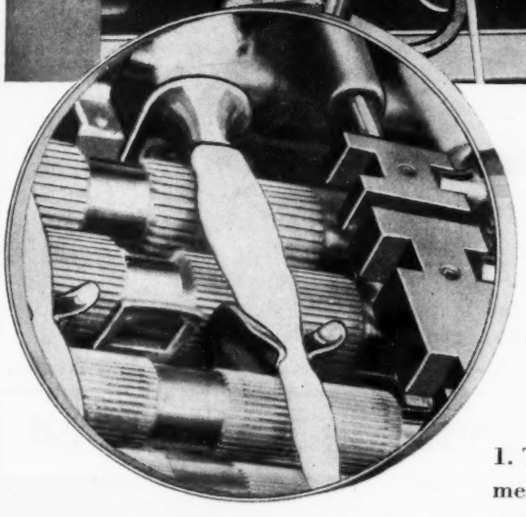
Each one of us may have the opportunity to prevent an injury, or perhaps save a life, by the earnest manner in which we go about telling these new associates the "tricks" of our trade.

—National Safety Council

SACO-LOWELL

Unified Fibre Control





The drafting mechanism is extremely simple with all parts readily accessible.

EFFECTIVE AND ACCURATE

Controlled Drafting

even with short variable or inferior staple

There are a number of outstanding improvements in this Saco-Lowell Model J1 Controlled Draft Roving Frame. Four are of major importance and are exclusively Saco-Lowell in design: . . . . . .

1. The Forming Trumpet. 2. The Weighting System. 3. The arrangement of the rolls and their construction. 4. The interrelated design and construction of roll stands and cap bars.

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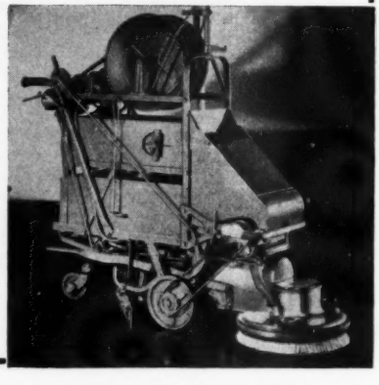


HOW OTHER MEN MANAGE

Picker Settings and Speeds

EDITOR COTTON:

"CONTRIBUTOR NO. 6791", in his question on page 98 of the March issue of COTTON, has asked for more discussion on beats per inch on pickers. He gives the following set-up in his own mill and asks for comments on it:

"We use Middling spots cotton, 1 1/32-inch for warp and 1-inch for filling. Our machines have two beaters; the first is a 3-blade beater, and the size of the feed roll there is 2½ inches. The second or finisher beater is a Kirschner beater, and the feed roll there is 2⅞ inches in diameter. At present our blows per inch are: breaker, 23.98; finisher, 43.67."

I think his blows per inch are okay. Anyone should be careful about blows per inch as the cotton may be curled, and when the cotton is curled the laps will split on the cards, making uneven work. Too many blows per inch will lower the breaking strength. Cotton is said to be like beef steak, the more you beat it the tenderer it gets. I am just as particular with pickers as with any process in the mill. A good picker set properly, is like good medicine, the best is none too good. All of the grid bars should be set correctly so that as many motes as possible will be removed. The grid bars should have the right angle.

Lower Speeds Give Better Break

Some time ago we had a beater speed of 1200 r.p.m. on ⅞-inch cotton. We cut the speed from 1200 r.p.m. to 970 on the finisher, from 1000 to 800 on the intermediate, and from 980 to 800 on the breaker beater. We stepped up the fan from 900 to 1010 r.p.m. This change gave us an increase in breaking strength of from 12 to 15 per cent.

When I was in charge of two picker rooms, we overhauled a picker and then I inspected all moving parts. I always paid particular attention to sectional plates to see that they worked nicely. We tore them down and cleaned them with a little vaseline to keep the sectional plate working freely on the rod. This point is of vital importance in getting uniform weight in the laps. The sectional plates at all times should be sensitive, though many picker men do not tear them down. It is not how fast a job is done that counts, it is how well it is done.

Another important factor in the making of picker laps is to prevent bad selvages. If the fan does not have enough speed it may cause bad selvages. The airways inside of the cage boxes should be open. It will be necessary to check on this point often. The dampers in the cage should be set so that the air is circulating evenly through all airways. Screens should be cleaned regularly so that no chokes accumulate on them or near the beaters. The fly boxes above the mote boxes should be cleaned regularly, and the grid bars should be open with no accumulation of motes or fly waste. The leather around the screens must be in good shape and must not be too wide. The leather should not be wider than the metal band around the screen or it will cut off the air and will not reach the place where it is needed to make a good selvage. The plates that hold the leather to the screen should be clean and smooth.

Some Other Pointers

The galvanized pipe leading from the fan under the picker should not serve as an anchor for chokes to accumulate. It is also well to check the evener bearings and plungers to see that they are not worn badly. The quadrant should be oiled also. All evener belts should run about 6 inches from the large end of the cone. All rollers must be lined so they will turn freely with the hand before starting them. Aprons are of vital importance to pickers and should be maintained in good shape at all times. When overhauling the picker it is well to overhaul the aprons at the same time. When making aprons, do not use a new belt as old belting that has been stretched somewhat will prove better. This will prevent many take-ups later on. Formerly, we used copper rivets but now I believe most mills use crescent belt fasteners. In using these, they should be placed so that the split in the fastener will go crosswise instead of lengthwise. This will prevent the leather from being stiff. Naturally, one side of the apron should not be longer than the other.

In our set-up we have an old picker, one-process, hooded up, and we are using 1-inch and 1 3/16-inch cotton. The machines have three beaters. The first beater is a porcupine cylinder, Buckley type, making 800 r.p.m. The second makes 800 r.p.m. and is a 2-blade beater. It beats 2277 times per minute. The finisher beater makes 970 r.p.m., giving 3827 blows per minute. The fan makes 1010 r.p.m.

At the porcupine beater the top grid bar is set 9/16-inch at the top and one inch at the bottom to the beater. The second beater is set 9/16-inch at the top and one inch at the bottom. At the Kirschner beater the grid bar is set to the beater ⅞-inch at the top and one inch at the bottom. Feed rolls are set on the porcupine 3/16-inch, second beater 5/16-inch, and third beater 3/16-inch.

CONTRIBUTOR NO. 6822

The Size of the Roving Bobbin and Its Effect on Ends-Down in Spinning

There are several significant thoughts presented here, but one lesson to be learned is that we must handle our roving packages carefully in transit and in doffing or our spinning will suffer . . . .

EDITOR COTTON:

This is in answer to "CONTRIBUTOR NO. 6894" whose question appeared on page 121 of the February issue and who wishes actual results as to the extent of end breakages per 1000 spindles per hour in spinning when the roving bobbin in the creels are from one-quarter to one-half full, or from one-third to two-thirds full as compared with the end breakage at other sizes of the roving bobbin.

Theoretically there should be no end breakage whatsoever during the whole run of the bobbin.

But, as in every other process, particularly spinning, fluctuations, irregularities and accidents enter the field which tend to offset the theory.

A few of the obstacles are:

1. During the run of a roving bobbin several yarn doffs are made and it is well known that on the very start of a doff the end breakage is higher, due to ballooning and traveler tension, while winding yarn on the empty bobbin.

2. Lumps, particles of seed and leaves imbedded in the roving cause uncalled for breaks.

3. Roller laps, hollow rollers, dry rollers, flying waste, too heavy or too light travelers, bad travelers, slack spindle drive, spindles out of center, dirty rings and many more things may cause end breaks during the lifetime of a roving bobbin and may occur at any time, scattered or in great numbers regardless of the size of the bobbin in the creel.

Even if all these obstacles were dormant for a while, a sudden change in temperature would surely call them back to life for another wave of end breaks.

4. Now, one of the main reasons, in fact I think the worst cause of high end breakage, is stretched roving. The roving on a bobbin might be stretched throughout the full length, again, the greatest stretching might occur either at the very start or when full. Or for that matter, start and end might be correct with the stretch in the middle.

5. Dull skewer points too may cause the roving to be partly stretched before it is taken in by the rollers. In spite of heavier weight a full bobbin turns more easily in the creel than a small piece near empty. This is on account of better leverage due to larger radius from the center of the skewer to the periphery of the bobbin.

While all these so-called legitimate breaks are accepted as belonging to the game, they can be combatted successfully to the very limit, and while still within fluctuation and subject to an occasional tidal wave of breakages these occurrences are surely not to be ascribed to a certain size of the creel bobbin, when no trace of stretch or any other fault can be found in the roving.

The answer to the whole question is:

A full roving bobbin, wound with faultless roving and creeled in on a good turning skewer, will at no time of its run or at no particular size of the bobbin have any higher pronounced end breakage than the usual all-around disturbances would normally accomplish. A non-stop end breakage test was conducted on a ring frame during the time from full to empty roving bobbins.

Known data for this test were as follows:

228 spindles; 2¼-inch ring; 4.40-hank roving; 1⅛-inch American cotton; 7200 r.p.m. of spindles; spinning 27s (filling) double ends up; 8x4-inch bobbin in creel; 3418 yards roving per bobbin.

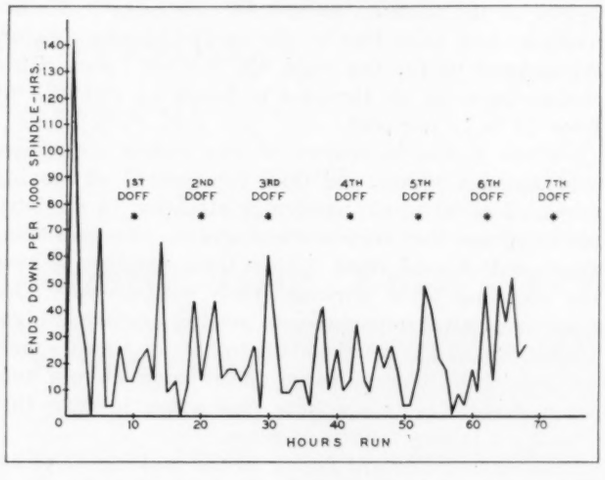
Some 6¾ doffs were made during the 68-hour run of the roving bobbin. To each doff about 500 yards of roving were consumed per bobbin.

The end breakage from full to empty roving bobbins lined up as follows:

Ends down on a doffing basis	Ends down from full to empty by quarters of bobbin size	Ends down from full to empty by thirds of bobbin size
1st. doff 80	Full to ¾ 114	full to ⅔ 149
2nd. doff 50	¾ to ½ 87	⅔ to ⅓ 105
3rd. doff 55	½ to ¼ 69	⅓ to empty 114
4th. doff 47	¼ to empty 98	
5th. doff 38		
6th. doff 42		
7th. doff 56		

The best picture may be gotten by studying the hour-to-hour performance as marked in the chart.

The vertical line shows the number of ends down per 1000-spindle hours while the horizontal line is divided at an hour-to-hour basis.



The stars marked in the middle of the chart indicate when the frame was doffed. Each doff wound off about 1/7 of the roving bobbin.

In this chart we can plainly see that each doff has a high breakage of ends at the start of the doff.

On the very start, at full bobbins in the creel, there

is excessive breakage. The first few bobbin layers are disturbed through handling of the bobbin at doffing, then at packing into boxes, transporting, unpacking and finally when being creeled into ring frames.

If we disregard the first hour high, the end breakage trend throughout the bobbin size would look very regular, not favoring any particular size of the bobbin.

The test on the chart shows a slightly higher breakage trend toward the empty bobbin. The explanation for this fact became known, when, after testing several bobbins on a roving tester, all registered a slight stretch of roving for the last 150 yards toward the empty bobbin. Here it might be said that this maladjustment of slightly stretched roving at the start of the bobbin seems to be a most common while unwanted practice.

The explanation of this handicap is that the pressure of roving against the bare bobbin is higher than anywhere else during the building up of the bobbin and consequently the end behind the point of contact becomes a slack and leaves the flyer at full speed.

Now, instead of running the frame slowly at slack tension for two or three layers and thus wind on unstretched roving, it is so much easier for the flyer tenders to run the ends tight and start at full speed, which practice will need no special attention.

So, intentionally or unintentionally, the fault is made by the speeder supervision. Or, condensed down to brass tacks, the speeder people would say, "My frame runs good, and I am making full production; I don't care how my bobbins run off."

End breaks due to spinning frame defects may easily be recognized as such.

Not so with end breaks due to stretched roving, which type of breakage is more difficult to be traced as to its cause (unless the roving be over-stretched and constantly breaking back.)

With the help of a roving tester it will be an easy task to locate stretched roving.

We may summarize all said into two basic requirements for better and smoother spinning.

First: Even roving.

Second: Up-to-date, expertly-set-up spinning frames.

On both items there could be volumes of discussion.

CONTRIBUTOR NO. 6897

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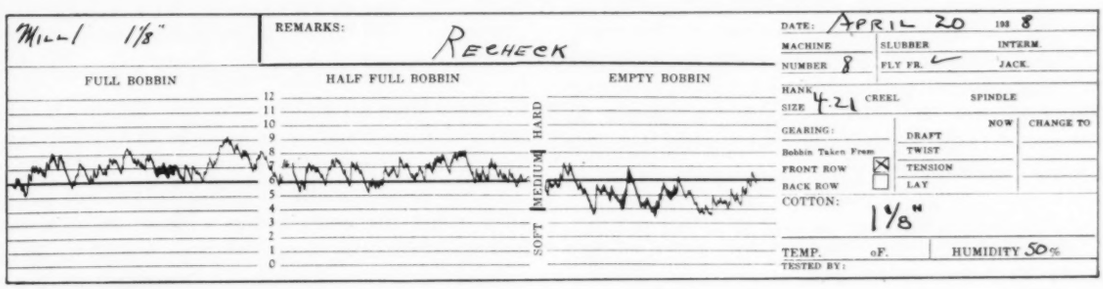
EDITOR COTTON:

In reply to "CONTRIBUTOR NO. 6894", whose question appeared on page 121 of the February issue and who asked at what point on the roving bobbin more ends are down in spinning, I am unable to offer actual spinning end breakage tests made during the time the roving bobbin in the creel is from half-full to empty. Like most spinning rooms, our policy is to run a "half-and-half" average of roving in the creel; that is, we try to have a full bobbin and a half-full bobbin feed one spinning spindle in order to balance any possible defect in either bobbin. For this reason I have never checked a full roving creel run-out. However, I would like to offer the following comment:

From our own experience I believe the chief cause of the first third of the bobbin being defective is variation in tension. The accompanying graph is an example of incorrect tension as found by a graphic roving tester. It may be seen that the first third of the graph, "empty bobbin", indicates this bobbin started with the roving running soft, while the "half-full bobbin" and "full bobbin" sections show twist and tension as about right. By a slight adjustment, we were able to set this frame so that on a subsequent test all three sections of the graph were properly aligned.

Some of the offenders which will make uneven tension on a roving frame are: Bobbins of unequal diameter, incorrect lay gear, bad cone belt, improper humidity, and, in the light of modern research, incorrect contour of cones. Bobbins of unequal diameter will cause the roving on the bobbin of the smaller diameter to become stretched from 2 to 4 per cent on the very first layer put on the bobbin. This stretching action is not as great on the successive layers but is present to some degree until sufficient cushion has been built up to allow the larger diameter to overcome its initial handicap. This point may be reached at from one-eighth to one-third the full bobbin diameter. An incorrect lay gear which lays the strands too closely together will cause the successive layers to ride on top of each other instead of filling in the open spaces between each strand. This would cause the bobbin to fill up faster than allowed for by the compensating reduction of the bobbin speed through the cones. Such roving will be stretched, hard, and flat in shape instead of being smooth, soft and round. Humidity that is not properly controlled will, of course, affect the entire package, but it may be well to point out that it can cause variation in the first made parts of the bobbin which in no way adds to its quality.

In the November 1938 issue of the *Saco-Lowell Bulletin* is shown a graphic outline of the tension variation existing on a roving frame from the empty to the full bobbin. This variation, it is pointed out, is caused by incorrect contour of the roving cones. The article goes on to state that as the empty bobbin starts off, the tension is on the tight side moving towards the "looser limit of tolerance", but still too



tight. At the one-eighth full bobbin stage the curve moves into the reasonably correct section, but continues on towards the maximum looseness which it reaches at about the one-third full bobbin stage. From this point the curve moves toward the tight side, passing through the soft section, through the section of reasonably correct tension which it leaves at about the one-half full section of the bobbin. The curve continues tighter and tighter until it almost reaches the "tight limit of tolerance" at the full bobbin. In summing up it might be stated that this graph shows the tension of the average bobbin to be loose about 20 per cent, correct about 15 per cent, and excessive about 65 per cent. If all this be true, it seems to me that a closer study of roving cone contours would certainly pay large dividends in better roving, better yarn, better running work, and better satisfied employees.

CONTRIBUTOR No. 6895

Slub Filling

EDITOR COTTON:

In answer to "CONTRIBUTOR No. 6727", who is endeavoring to make slub filling,* it would have been better for him to have given more information so that the answers could have been more in detail and more helpful to him. He should have given the staple cotton used, whether carded or combed, the hank roving, draft, spindle speed, single or double roving, counts of desired slub yarn, distance apart of slubs, etc.

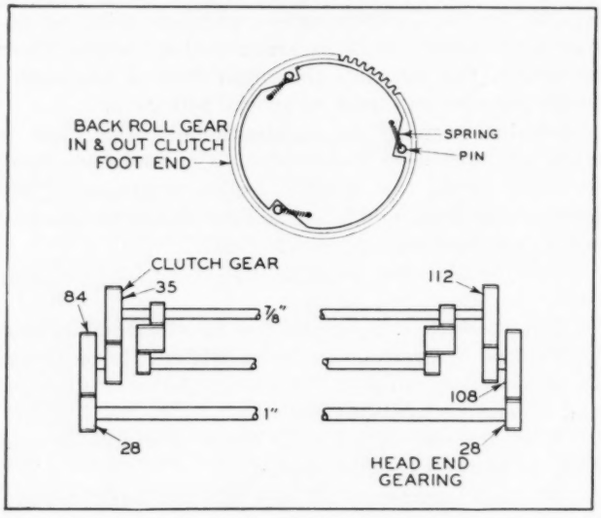
It might be well to say here that a spinning frame of any make can be changed to spin slub yarn. The motion that jumps the back and middle roll ahead should give the results the contributor desires, provided that the changing motions are shock-free. At this point comes the consideration of what drafts and staple are being used. It is an old established fact that the inserted twist in any, especially uneven, yarn is always going to the thin places, so naturally the bunches in the slub yarn will never have the same number of turns per inch as the nearby thinner places. This calls for correct proportioning of the following items: length of slub and thickness of slub against thickness of thin spaces. The material used should give good results from 1¼-inch or longer staple. I believe that combed preparation will give a better run.

The middle roll must be heavy; if possible it should weigh from 10 to 12 ounces. Thus, this calls for wider roller settings of front to middle roll, but establishes a solid control. A break draft of 1.08 is correct.

The direction of roving twist has absolutely no influence on the good or bad running of the yarn, whether the directions of twist are right or left. By the way, should the direction of twist have any effect then "CONTRIBUTOR No. 6727's" condition should be correct because from regular twisted roving, reverse yarn is made, whereby the yarn should gain the little twist still left in the drawn out roving. On the other hand, the yarn loses the little twist still left in the sliver if both roving and yarn were twisted in the same direction. Although it is possible, as "CONTRIBUTOR No. 6727" says, to devise a method to stop the front roll at intervals, such as "jumping ahead", this would undoubtedly call for more complicated device.

I suggest that this contributor try his own method once more with the following data as guide: Slub yarn counts about 10s; cotton of 1¼-inch staple or over, preferably combed preparation; 5 hank roving run single creel, regardless of having left or right twist; heavy middle roller; about 17 turns per inch; about 140 r.p.m. of front roll (one inch diameter); and a draft of about 5.

Another method by which the slub filling has been made successfully is as follows: Count of yarn 10s; Upper Egyptian cotton, combed, 1¼-inch staple; 4 hank roving single creeled; heavy middle roller; 17 turns per inch; front roll speed 140 r.p.m.; traveler No. 8; ring size 1⅝-inch; spindle speed 7000-7500.



Clutch to throw out from foot end when making fine yarn; to be engaged at foot end when making slub . . . . . .

Contrary to the method of "CONTRIBUTOR No. 6727", this method makes thin places into heavier yarn. The whole equipment was a 90-tooth draft wheel on whose circumference was cut out a row of 6 teeth in 7 different places. Looking at the gear from the side the arrangement was as follows:

Cut down	6 teeth,	let stand	3 teeth
Cut down	6 teeth,	let stand	5 teeth
Cut down	6 teeth,	let stand	7 teeth
Cut down	6 teeth,	let stand	10 teeth
Cut down	6 teeth,	let stand	7 teeth
Cut down	6 teeth,	let stand	10 teeth
Cut down	6 teeth,	let stand	6 teeth
Total cut down	42 teeth,	let stand	48 teeth

Each time an empty space on this draft wheel will cause the back roll gear to stop an instant, causing a thin place between the front and second roll.

This arrangement might or might not produce exactly what the contributor wishes; in this case, further experiments along this line would probably help.

CONTRIBUTOR No. 6729

*The original question appeared on page 99 of the November 1937 issue of COTTON and other discussions were carried on page 122 of the April 1938 issue, page 110 of the November 1938 issue, and page 89 January 1939 issue.

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Setting Pickers on Box Looms

EDITOR COTTON:

On page 129 of the May issue of COTTON, "CONTRIBUTOR NO. 6803" has asked some questions concerning the setting of pickers on box looms. I shall try to answer them in order.

1. *Should the spindle on which the picker works on the box end of the loom be bent inwards at the front to make the shuttle run to the reed as it leaves the box?* Under no circumstances should the picker spindle on a loom be bent to throw the shuttle on the reed. Many loom fixers and technical writers advocate the bending of the picker spindle to make the picker throw the shuttle onto the reed, but this is very poor practice, in my opinion, and should never be done as it is likely to cause the shuttle to wobble in its flight across the lay. The picker spindle should always be parallel with the box back, but the box back should pitch slightly toward the reed. This means that the box back should be lined so that it protrudes 1/32-inch into the reed line at a point 18 inches in from the box mouth. To obtain this pitch, use a straight edge long enough to extend 18 inches into the box and still have a good bearing against the reed. Place a straight metal strip, 1/32-inch thick, between the reed and the straight edge, and adjust the box back so that it will just touch the extreme end of the straight edge, 18 inches in from the mouth of the box. This gives the proper pitch line of the box back, provided the reed is straight.

The picker spindle should next be adjusted so that it will be parallel to the box back. Similarly, the box floor should have a 1/32-inch pitch into the raceboard and have an elevation of 1/64-inch above the raceboard. This setting can be obtained by first adjusting the box floor so that it will be 1/64-inch above the raceboard and placing a straight metal strip 1/32-inch thick under the straight edge and then adjusting the box floor so that it will touch the extreme tip of the straight edge 18 inches in from the mouth of the box. The mouth of the box should be maintained at an elevation of 1/32-inch above the raceboard.

2. *Should a hole be cut in the picker for the box end before it is put on, or should the picker be placed in the loom, a place marked by the nose of the shuttle, and then the picker taken off and bored where the nose of the shuttle marks the picker?* It is not absolutely necessary to make a hole in the picker for the shuttle point. However, it is my opinion that a hole made properly in the picker for the shuttle point is preferable. In making this hole the picker should be placed on the spindle and the latter fastened in its proper position. With the picker at the back of the stroke, force the shuttle tip hard up against the picker so that it will make a small impression in the picker. With the shuttles pressed against the box back, move the picker to its forward position and see that the impression mark coincides with the tip of the shuttle at any point of the stroke. It will do this if the picker spindle is properly lined up and is not bent. Now remove the picker and punch the hole where the impression mark indicates that the point of the shuttle will strike. Do not bore, cut, or chisel out the hole. Use a punch similar to a center punch, but conforming to the shape of the tip of the shuttle. A shuttle point from a discarded shuttle is very good for this purpose.

3. *Should the picker be set to the shuttle or should the shuttle be set to the picker?* The picker should be set to the shuttle and not the shuttle to the picker. The position of the shuttle cannot be altered without disturbing the proper alignment of the shuttle boxes. Hence, setting the shuttle to the picker should never be done. With proper adjustment of the picker spindle, and the correct size picker, there should be no trouble in making the shuttle point strike directly in the center of the picker head. It is very important that pickers of the correct length and thickness be used in order to insure that the shuttle point will center in the picker head. Pickers, which need to be cut off, filed down, or otherwise fitted up for service, should not be used. Get the correct size picker, which any picker manufacturer can supply, and eliminate all unnecessary troubles in this respect.

In conclusion I also wish to say that it is very important that the slots in the side of the drop boxes coincide with the picker slot in the box back. Otherwise, the picker will bind and quickly wear out. It may also cause smashes or cause the shuttle to fly out of the loom.

IVAR MOBERG

◆

EDITOR COTTON:

For the benefit of "CONTRIBUTOR NO. 6803", who has asked a number of questions about setting the picker on box looms, I will outline our method of doing this.

Place the box cell in line with the reed. Using the proper size of picker, place it on the spindle and mark the picker with the nose of the shuttle by pressing it against the picker. Remove the picker and at the place where the shuttle point has marked the picker, bore a nose bedding in it for the point of the shuttle. After this is done, replace the picker on the spindle and bring the picker forward and parallel it by adjusting the spindle at the front, up, down, back, etc., whichever one or all that are necessary. There will be no trouble with the shuttle lying against the reed if this is done properly. However, if the picker is not parallel, it will throw the shuttle crooked. It is also essential to have the box plate leveled with the raceplate.

CONTRIBUTOR NO. 6810

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The operative usually knows what is wrong when trouble occurs—talk to him.

◆

Two thousand years ago Aesop said: "One day there shall be a great product grown in a great country, and the government shall make a great mistake by meddling with it."

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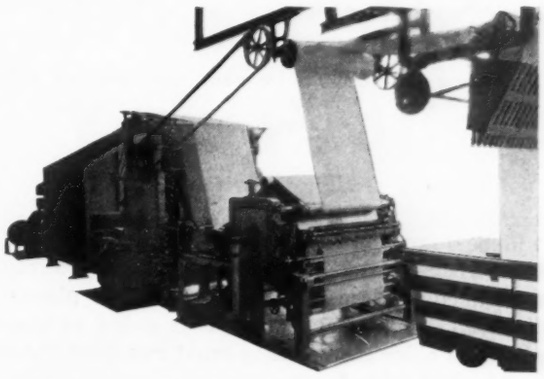

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Age Has No Bearing on Salary

"If you are too old to learn, you are too old to earn" . . . . . .

EDITOR COTTON:

I do enjoy reading back issues of COTTON.

On page 102 of the May, 1935, issue of COTTON will be found an excellent article written by "K. C. (CONN.)". States "K. C." in his first paragraph, "A man need not apply for work in some places after he is 45 years of age." What is going to become of all these older men if they must run onto the switch and be left there?

Let me state here that your age has no bearing on your salary. You will find men at any age who do a thing when they are told once. This is right and well, for we all know men who move only when fate gives them a wallop with her stuffed club. But there are a few men who do the right things without being told. These men are rare.

Then there are men of all ages that have done things which other men have said were impossible. These men are one in a million. Therefore, gray hairs don't fill empty heads; we pay men by the year, not for their years. Is it not a fact that output is measured and production estimated? Any man at the helm of any manufacturing concern wants the machine, human or mechanical, which delivers with maximum perfection and minimum waste—the greatest speed with the fewest errors.

The man capable to run a large concern is looking for the biggest dividends to the stockholders and I don't care if he was born 20 or 65 years ago. If your mind is up to date your employer will forget the date of your birth. But if you cease to absorb new ideas, or close your eyes to improvements, and if you don't conserve your vitality, and are not guided by yesterday's experience, surely you are too old to learn. If you are too old to learn you are too old to earn.

I am considered an old timer and I want to try and prove the value of experience by putting the following questions. The answers to them will prove good dope for all students. I am sure.

1. If the speed of the fly frame is increased, the pressure of the paddle is increased also; now on which side of the hyperbola curve will this throw the line known as the "actual bobbin revolutions obtained"?

2. If the cone belt slips over 1½ per cent at the start of a set of roving, on which side of the hyperbola curve will be found the line known as the "actual bobbin revolutions obtained"?

3. What will change the number of coils to the inch on a fly frame without changing any gearing?

4. If a fly frame is running with a slack tension with an American builder and the smallest possible rack gear is already on, what other change can be made to have a perfect tension throughout the set?

5. When the carriage is making its downward traverse and is blocked by part of the casing or bobbin, what should be done to remedy this on the American builder? On the English builder?

6. Is it possible for all ends to break down on a fly frame without having any breakage of parts on the machine, or without anything having slipped? If so, what is the cause?

7. On a card, when the web has a tendency to follow the doffer, we lower the doffer comb, and when the web sags, we raise the comb. Now, what is the proper setting between the comb and the doffer when the comb is raised? When the comb is lowered? Why?

WASH (R. I.)

Dirty Card Flats

EDITOR COTTON:

"CONTRIBUTOR NO. 6787" has asked for a method of keeping card flats clean in his letter on page 95 of the March 1938 issue of COTTON.*

Our first trouble is to discover what is causing them to become dirty and filled up. This may be caused by a number of things. Grinding the flats too heavy will cause them to fill up. When the wire is ground too heavy it will have burrs on the points which will cause the leaf, neps, and trash to accumulate at the point of the wire or just below the point. Then there are times when the flat brush will cause the flats to fill up because it is not set properly—either set too deep or too shallow.

I have also seen the flats fill up because the fly waste was not removed from under the card regularly. We know that the center of the underscreens is the lowest part of the card and often the fly waste will accumulate at this spot; later the suction of the cylinder will draw waste up through the screens and permit it to get into the doffer, cylinder, and flats, and at times choking up the whole card. The result of this is dents in the cylinder, doffer, and flats, and sometimes in the licker-in screen.

Often we allow the bristles in the flat brushes to become worn; it is much better to have good bristles with plenty of life in them. Once the life is gone from the bristles, the brushes are about as much good as the doffer and cylinder without fillet.

The best remedy I have found yet to clean the flats is to reverse the flat brush and run it a little deeper than usual; run it in reverse a couple of hours if necessary and this will bring all the leaf and trash to the surface; then put on the burnishing brush, which should take all the foreign matter out of the flats by the time they have been around two or three times. While this is being done, a screen should be placed around the card to prevent the trash being thrown on the other machines.

The card cannot do good work as long as the flats are dirty. It is important that we find some suitable method to keep them clean.

CONTRIBUTOR NO. 6862

*Other answers to this question appeared on page 128 May, page 96 June, page 96 September, page 98 December 1938 issues, and page 132 February 1939 issue.

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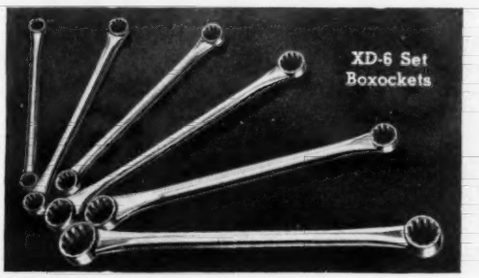

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214. Saco-Lowell Cotton Machinery—Spinning—the second edition of a 56-page booklet, illustrated with the company's product and containing valuable charts, production tables and other spinning data. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

217. Diamond Fibre Hollow Ware—32 page booklet and catalog, attractively illustrated, showing various types of boxes, trucks, cans, barrels, baskets and trays of Diamond Fibre Hollow Ware. Of interest to every mill man in solving material handling problems. Free on request. Continental-Diamond Fibre Co., Dept. C, Wilmington, Delaware.

218. Butterworth Electric Guiders—6-page folder describing and illustrating the new Butterworth Electric Cloth Guider. This guider is built on the same principle as the Foxwell Air Guider and is unexcelled for fast, accurate guiding. H. W. Butterworth & Sons Co., Philadelphia, Pa.

223. Alloyed Iron in Southern Industrial Fields—16 page illustrated catalog dealing with the properties available in modern cast irons. International Nickel Co., 67 Wall St., New York, N. Y.

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233. Catalog No. 22—an attractive illustrated catalog describing in detail the Shamrock shipping containers and the new canvas trucks for textile use. Meese, Inc., Madison, Ind.

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263. Gastonia Brushes—New catalog and price list showing the complete line of brushes for the textile mill. Gastonia Brush Co., Gastonia, N. C.

268. Factoring and Financing—Illustrated booklet which outlines the functions of factoring in the textile industry. Textile Banking Company, New York, New York.

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278. Textile Testing Laboratories—a 10-page illustrated booklet describing a modern textile testing laboratory and pointing out the necessity for laboratory air conditioning systems. Ask for bulletin 136. Parks-Cramer Co., Fitchburg, Mass., and Charlotte, North Carolina.

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286. Tricon W-30—Study of wetting agents and their activity with recommendations for textile processing. Rohm & Haas Co., Philadelphia, Pa.

287. New American Pulley Motor Base Catalog—an attractive new illustrated catalog describing in detail construction and application of new tension control motor base. Includes data comparing performance of drives with and without tension control motor base and applications are shown for both flat and V-belt drives. American Pulley Co., Philadelphia, Va.

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290. Hyatt Roller Bearings on Textile Machinery of All Kinds—34 page booklet which describes and illustrates how Hyatt bearings are being applied to textile machinery. Hyatt Bearings Division, Newark, New Jersey.

291. Wolf Products for the Textile Trade—Illustrated booklet describing the Wolf line of chemicals for the printing, dyeing, sizing and finishing of all textile fabrics. Jacques Wolf & Co., Passaic, N. J.

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297. Lunkenheimer List Price Schedule R-I—new 44 page catalog covering the entire line of valves, boiler mountings and lubricating devices manufactured by the Lunkenheimer Company. The Lunkenheimer Company, Cincinnati, Ohio.

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313. Detergent Wall Card—valuable and handy wall card listing pH strengths in both acid and alkali solutions. Chemists and dyers will find this chart invaluable in their everyday work. Detergent Products Corp., Atlanta, Ga.

314. Winding Production Chart—this useful production chart can be used for any style of winder. Also included are instructions for figuring yarn takeup speeds. Universal Winding Co., Providence, Rhode Island.

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Continued from Page 96

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330. **Tools for the Textile Trade**—a twelve-page booklet illustrating and describing specially selected tools for all textile mill departments—Loom Fixers, Spinning Room Fixers, etc. Snap-On Tools Corporation, Kenosha, Wisc.

331. **Unbrako Self-Locking Hollow Set Screw**—Bulletin Form 532 includes illustrations and descriptive matter of this latest improvement in socket set screws. This bulletin also features the complete line of "Unbrako" Socket Screws. Standard Pressed Steel Co., Jenkintown, Pa.

29. **Continuous Card Stripper**—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc. Saco-Lowell Shop, 147 Milk St., Boston, Mass.

30. **Lubrication of Textile Machinery**—32 pages illustrated. Data covering the economical lubrication of all textile machines. New York & New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

38. **Sleaziness in Full Fashioned Knitting**—Illustrated survey with samples of fabric showing causes of sleaziness and methods to be employed in eliminating it.—By Textile Machine Works, Reading Pa. (This company also issues parts catalog for Reading full fashioned machines with general information on subject of full-fashioned knitting.)

62. **Rubber Products for the Textile Industry**—A 40 page booklet giving a wealth of information on the proper selection, installation and operation of rubber belts, together with charts, showing horsepower rating, pulley sizes, V-belt sizes, also information on all types of hose and rubber covered rolls used in the textile industry. Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J.

64. **SKF in the Cotton Mills**—24 page bulletin describing bearing installations for practically every machine in the textile industry including roller bearing spindle and tension pulley. SKF Industries, Inc., Philadelphia, Pa.

65. **Bulletin No. 500. Cooper-Hewitt Industrial Illumination**—booklet explaining in detail the importance of good lighting and the necessity of proper quality as well as proper quantity of light. General Electric Vapor Lamp Co., Hoboken, N. J.

70. **Fafnir Ball Bearings for One Process Pickers**—outlining the advantages of ball bearings in guaranteeing smooth, accurate motion, particularly on evener, as well as uninterrupted production, ease of operation and cleanliness of bearing units throughout the one-process pickers. Fafnir Bearing Company, New Britain, Conn.

77. **Bulletin S 200**—Illustrating and describing the new Reeves Variable Speed Drive for spinning and twister frames, explaining its many distinct advantages and giving charted results of exacting tests. Reeves Pulley Company, Columbus, Indiana.

88. **Dayton Cog Belt Catalog**—A 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept. C-11, Dayton, Ohio.

109. **Some Properties of Starch and Dextrine**—Explaining certain fundamental properties of starch and its derivatives and their action when heated and agitated. Stein, Hall & Co., 285 Madison Ave., New York City, N. Y.

110. **3-In-One Oil for Industrial Uses**—showing the many industrial uses and advantages of this oil. A. S. Boyle Co., 1934 Dana St., Cincinnati, Ohio.

116. **Arcy**—Telling in an interesting way the story of Arcy, which completely liquefies ordinary thick boiling pearl starch and its many advantages. Drake Corporation, Norfolk, Va.

117. **Anti-Friction Bearings as Applied to Spinning, Drawing and Twisting Frames**—This bulletin shows with detailed drawings how a simplified design of roller bearing applications is made to replace the plain babbitt bearings and lists the advantages that are gained. It deals primarily with better continuous production and in consequence freedom from equipment care and repairs. Hyatt Roller Bearing Co., P. O. Box 476, Newark, N. J.

120. **Goodyear Mechanical Rubber Goods Catalog**—40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill. Goodyear Tire & Rubber Co., Akron, Ohio.

128. **Houghton's Hand Book for the Hosiery Dyer**—This book contains the result of 69 years of experience in research and development of processing materials for the textile industries, together with a wealth of other data useful to every hosiery dyer. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

139. **Textile Detergents—Theory of the use of alkalis and control of pH**—This 32 page booklet explains in simplified manner for the benefit of the layman the chemical processes that take place in using textile detergent in the finishing of textile goods. It contains many useful tables and data. Detergent Products Corp., Peachtree Bldg., Atlanta, Ga.

141. **V-Belt Engineering Data Book**—Over 50 pages of pertinent engineering information including data on selecting a V-belt drive design of special V-belt drives, numerous standard tables, charts and belt and sheaves list prices. Manhattan Rubber Manufacturing Div. of Raybestos-Manhattan, Inc., Passaic, N. J.

152. **Plant Check-up List**—Crane Co., 836 South Michigan Ave., Chicago, Ill.

154. **Johnson Bronze Bulletin No. 340**—showing over 600 sizes Johnson general purpose bronze bushings. Johnson Bronze Co., New Castle, Pa.

155. **Link-Belt Catalog 1574 on the P. I. V. Gear**—giving details of this positive variable speed control. Link-Belt Co., 307 N. Michigan Ave., Chicago, Illinois.

156. **Link-Belt Engineering Data Book No. 125**—showing features and giving engineering data on Link-Belt silent chain drive. Link-Belt Co., 307 N. Michigan Ave., Chicago, Ill. Manufacturers' Association, 1794 McCormick Bldg., Chicago, Ill.

163. **Roto-Koner**—Bulletin describing the new No. 44 Universal Winder, known as the Roto-Koner for winding knitting yarns, which has many new and distinctive features. Universal Winding Company, P. O. Box 1605. Providence, R. I.

164. **Johnson Rotary Pressure Joints**—Bulletin describing the rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instructions, types, sizes, dimensions and prices. The Johnson Corp., Three Rivers, Mich.

166. **Precision Winding**—An interesting 30-page booklet on rayon yarns and winding, designed for weaving and finishing mills using silk and rayon. Universal Winding Co., P. O. Box 1605, Providence, Rhode Island.

168. **The Tube-Tex for Tubular Knit Goods**—Bulletin describing this modern machine which extracts, processes, dries, conditions and folds in one continuous operation, lowering costs, saving labor, power, space and waste. H. W. Butterworth & Sons Co., York and Cedar Sts., Philadelphia, Pa.

170. **Gates Textile Accessories**—showing the increased efficiency and economy to be secured through the use of Gates cone belts, evener belts, card bands and loom binder cushions. The Gates Rubber Company, Denver, Colo.

171. **Design of V-Belt Drives**—48 page booklet full of valuable tables and data showing the type, number and design of V-belts that will give the greatest efficiency on each particular drive. The Gates Rubber Company, Denver, Colorado.

176. **Sonoco Products**—A 60 page illustrated booklet giving descriptions, specifications and charts of the many Sonoco products, including bobbins, cones, tubes, cork cots, roving cans, spools, rolls, etc. Sonoco Products Co., Hartsville, S. C.

184. **Speed Control Handbook T-35**—new reference book in variable speed control, said to be the most complete and helpful book on this subject ever published. 112 pages and more than 200 illustrations of interest to every production executive, purchasing agent, superintendent, overseer and master mechanic. Reeves Pulley Co., Columbus, Ind.

185. **Dulux—The White Finish That Stays White**—New book describing the new ten-point finish for factory walls and ceilings, the finish that stays whiter, stays cleaner and stands repeated washings. E. I. du Pont de Nemours & Co., Finishes Division, Wilmington, Del.

187. **The Wildman Single-Head Full-Fashioned Hosiery Machine**—Literature on request from the Wildman Mfg. Co., Full Fashioned Division, Norristown, Pa.

188. **Form 374**—This form enables you to gather your own cost data on your sewing machines and determine whether new Union Special Machines will show big savings. Furnished free by Union Special Machine Co., 400 No. Franklin St., Chicago, Ill.

191. **The Bahnson Humidifier**—bulletin describing Bahnson Humiduct system which combines humidifying, heating, ventilating and air conditioning all in one unit, will be sent free on request. The Bahnson Co., Winston-Salem, N. C.

COTTON, Grant Bldg., Atlanta, Ga.

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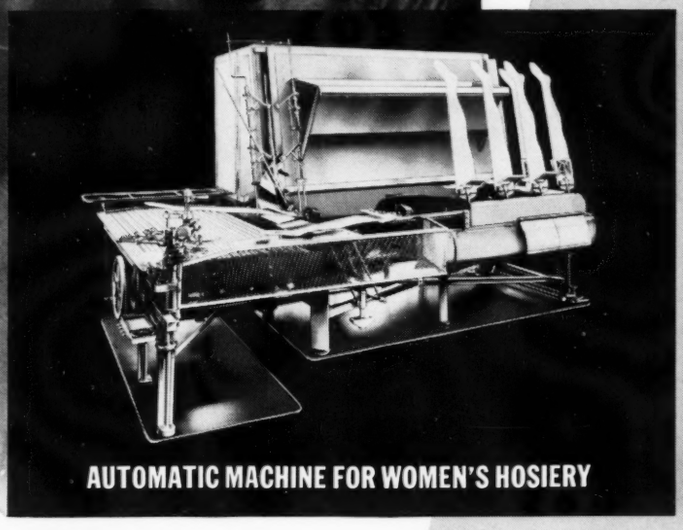
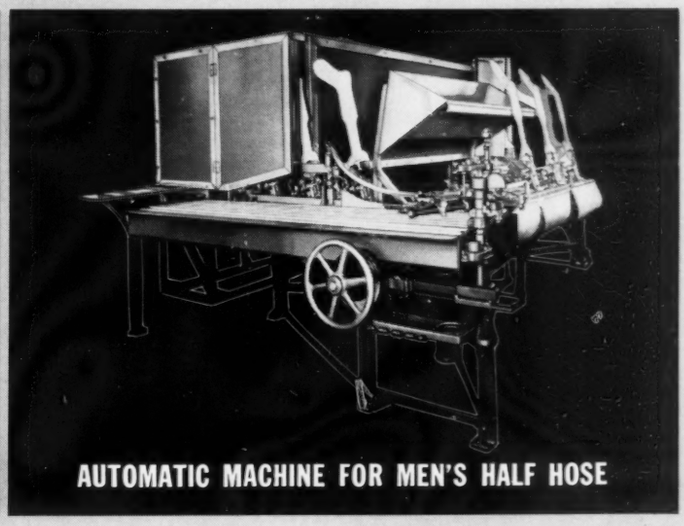
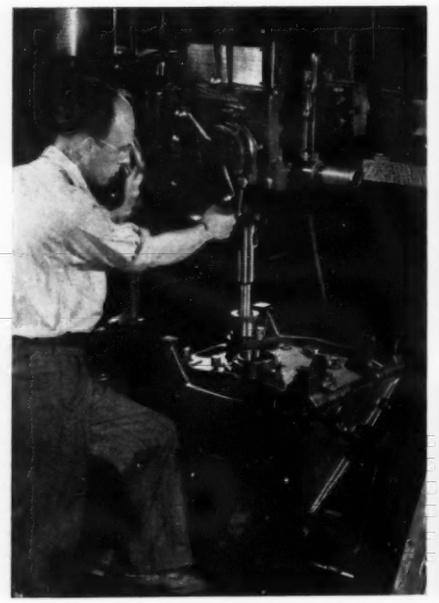


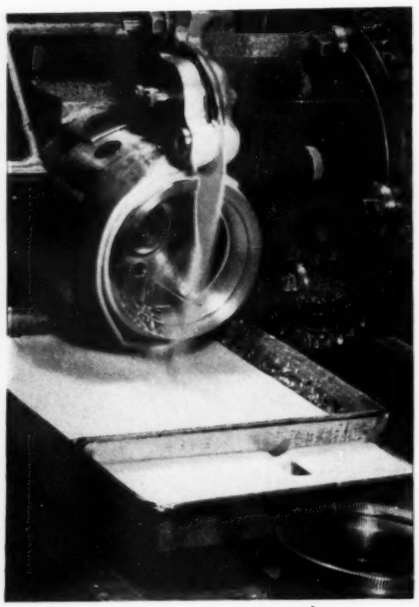
AUTOMATIC MACHINE FOR WOMEN'S HOSIERY

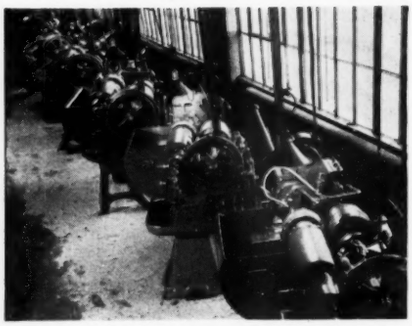


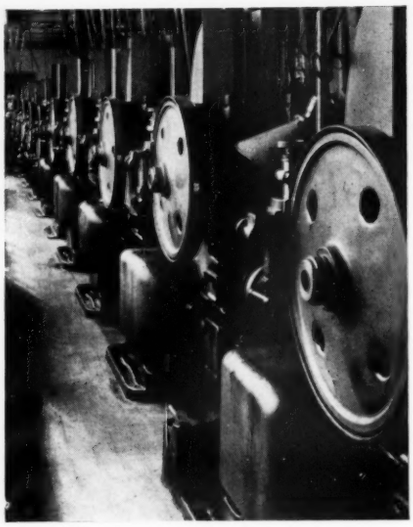
AUTOMATIC MACHINE FOR MEN'S HALF HOSE

Proctor & Schwartz BOARDING MACHINES









MACHINES TO ENFORCE THE LAW OF PRECISION

Because knitting machines are precision implements, precision implements must be used in their construction. If a standard machine is not available to do a job to Scott & Williams' specifications for accuracy, a **special** machine is created—by S & W engineers . . . with S & W equipment and materials. The great trunnion jig for frame drilling, shown in photo at upper left, for example—designed by our own engineers and made in our own shops—is **unduplicated** in accuracy for doing a knitting machine frame drilling job. The automatic slotting machine for slotting needle cylinder heads, shown in center photo above, is another S & W "original". Photos at the right show some of the great batteries of lathes and slotting machines which are essential equipment in maintaining the precision-engineered efficiency the knitting world has learned to expect of Scott & Williams' machines.

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40 WORTH STREET, NEW YORK, N. Y.

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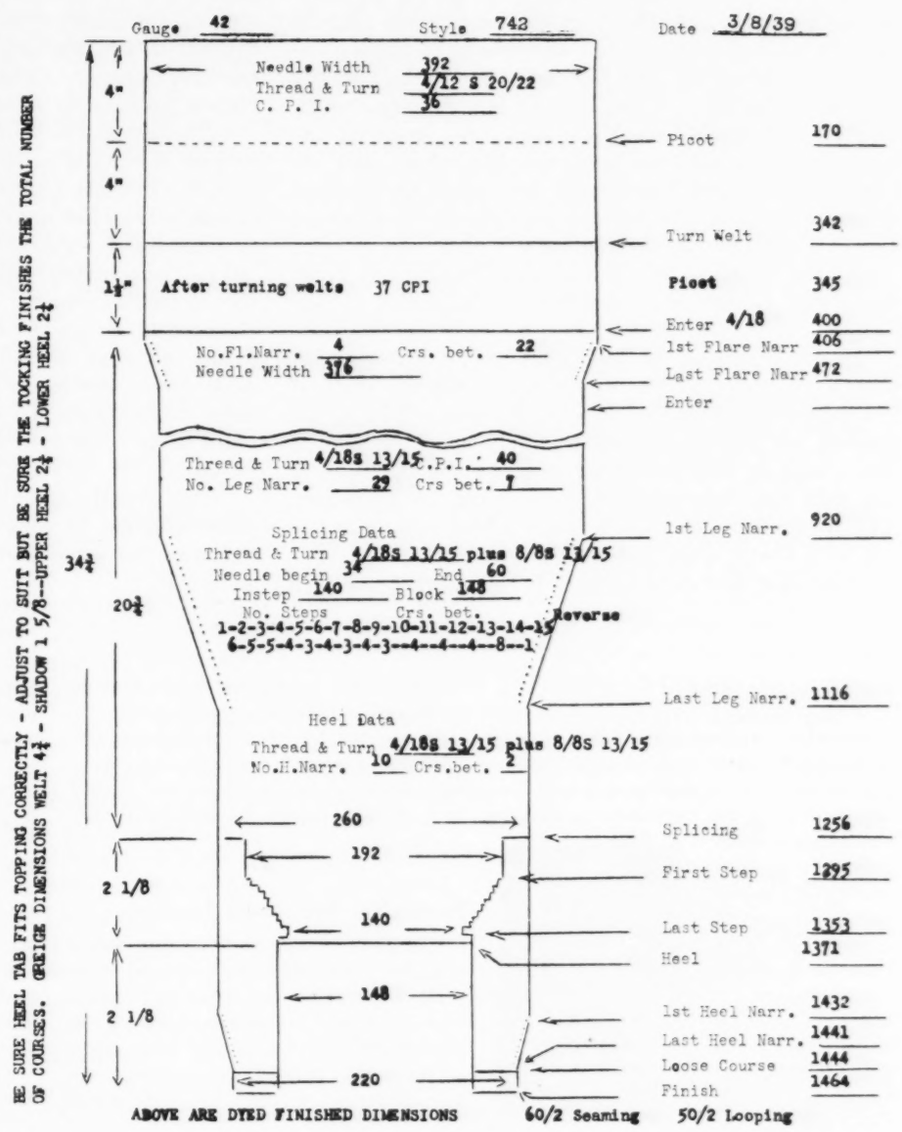
KNITTING SECTION

Style Specification Charts

By M. M. Abrams

THE manufacturing of full-fashioned hosiery was the gradual development of an industry over a period of time; it was not a definitely planned operation from the beginning. In this day and time, when a new industry is established, plans are evolved in blue print fashion and manufacturing details, procedures, etc., are worked out ahead of time.

Due to the rapid growth of the full-fashioned hosiery industry, improvement of methods and scientific analysis of procedure and manufacturing followed far behind the development of machinery and equipment. Most hosiery was designed and made directly from the machine. The superintendent would set up a pattern on a machine that he thought salable and the mill would produce the pattern until it could no longer be sold. Often the specifications for the pattern or style were retained mentally by the superintendent or kept in his pocket notebook along with other mill data. Very often when it was found necessary to manufacture the same pattern after some months or years, the style specification details for making the hose could not be located.



As the industry developed it became apparent that certain specifications for standard constructions were becoming more and more consistent, and experience taught that a particular formula of constructions and reinforcements produced the best results in stockings. And as the necessity for cost finding became evident, it likewise became necessary for the management to have predetermined costs on a style so that it could profitably fit a style into a price bracket.

Thus were introduced style specification charts.

These charts became a permanent part of the factory records and could be used by the cost department for calculating cost of materials, by the manufacturing department for reference and guidance, and by the sales department for construction data.

The Style Specification Chart

A style specification chart is a blue print of the style stocking made. It works along the same principle as the blue prints used by construction engineers. The style specification chart shows the materials to be used, where they are to be used, how far they are to be used, establishes dimensions, etc.

The accompanying illustration shows a style specification chart for the stocking, except for the foot, which requires a separate specification chart. This chart lays out all the necessary details for the construction of a style.

At the top of the sheet is listed the gauge, the style number, and the date the specification is made out. On the left-hand side the overall dimensions of the leg are given, including the heel tab, and the raveling at the bottom of the heel. Along side of it are given the dimensions of the back of the welt, the front of the welt, the after-welt, the boot, the upper heel, and the lower heel. These dimensions are given as finished dimensions (what the various portions of the stocking should measure after boiling out).

At the extreme left of the specification are given the greige dimensions and a few special words of caution.

In the center of the specification the following information is given: the needle width for the start of the welt, the thread and turn of the welt silk, and the courses per inch to be knitted in the welt. It will be noted that on this particular stocking the silk used in the welt was four thread twelve turn 20/22 denier. The dotted line denotes the picot which will be at the top of the welt when the welt is turned.

The next instruction given is the courses per inch for the after-welt. Then follows the number of flare narrowings, the courses to be left between the flare narrowings and the needle width after the narrowings have been put in. Following that is the silk thread count and twist for the boot, as well as the number of leg narrowings and the courses to be left between each narrowing. Then comes the material going into the heel splicing, and instructions as to where the materials are placed into the stocking. After this is given, the instructions for the stepping of the heel follow. The data on the heel re-inforcement as well as the number of narrowings, etc., are given. The needle width at the various stages of construction are likewise listed.

On the right-hand side of the specification is given the guide for the various portions of the stocking. For example, the welt picot is put in at 170 courses on the course counter. The welt is turned at 342, a picot is inserted at 345, and so on down the line. At the bottom of the right side is listed the total number of courses in the leg including the raveling courses for the heel looping. At the bottom of the specification is placed the yarn to be used in the seaming and looping.

The second sheet of the specification (not shown) follows along the same lines as the first sheet, except that it gives the information for the footing. In addition to this, the number of courses placed in the foot to increase it for each size to be footed is also given. All the information essential to the footing is listed on the instruction chart.

Several copies of each style specification should be made, one copy should be kept in the manufacturing department, one in the cost department, and one in the sales department. Of course, discretion is to be exercized as to what information the sales department divulges.

The actual lay-out of the specification chart as illustrated can be considerably varied but the principle remains the same and the data given are essentially identical.

◆◆◆

Aycock Made Fidelity Chattanooga Representative

Rupert C. Aycock, with office at 911 Provident Building, Chattanooga, Tenn., has recently been appointed exclusive sales agent for the Tennessee, Alabama and Georgia territory of Fidelity Machine Company, 3908-18 Frankford Avenue, Philadelphia, Pa.

Col. Aycock

Included in the line of machines to be handled are the Fidelity Universal ribbers, tubular knitting machines, cylinders and dials, knitting attachments, braiding, winding and spooling machines as well as textile accessories.

Colonel Aycock is well known to the hosiery manufacturers of the South and has spent a lifetime in the hosiery industry. While a manufacturer, he served on the board of governors of the National Association of Hosiery Manufacturers for twelve years and during four of these years he was vice-president.

◆

Elastics for Full-Length Stockings

The Narrow Fabric Company, Reading, Pa., has developed several new styles of elastics for full-length stockings. The new styles are patented, but the patents will not be used as a source of revenue in the form of royalties, but are simply to be used as a protection against substitute merchandise.

One style is made up into a self-supporting over-the-knee stocking. The elastic is a little wider than two inches and contains a garter of one-way stretch at the top and an integral portion of two-way stretch material between the garter band and the point where the elastic is attached to the stocking. Another style of elastic is similar to the foregoing except that the combination one-way and two-way elastic is much lighter in construction and is not intended to be self-supporting. The elastic is applied to the full-length stocking and replaces the ordinary welt. The stockings are gartered in the regular manner, but the elastic around the leg affords unusual comfort to the wearer, gives a snug fit, and keeps the seam straight, according to the manufacturer. Another style is for a stocking made with an inserted elastic about three-quarter inches wide of two-way stretch mesh. The elastic is inserted in the leg of the stocking a short distance below the welt. The mesh elastic is said to allow complete freedom of action and to eliminate strain over the knee and at the point where garters are attached.

KNITTING KINKS

Operating and Fixing of S & W Model ES Machines

(Article 5)

By Emmett Starr

THIS is the fifth article* in a series concerning the care, operation, and fixing of the Model ES machine. The series is written with the assumption that the reader has before him a copy of the S & W catalog of parts pertaining to this machine so that he can follow each Plate as mentioned in the article. Save your copies of the magazine so that you will have the series complete. Should you wish any particular phase of fixing discussed, the author will be glad to do so upon request through the editors.

Thrust Bar, Thrust Bar Guide Plate, and Pattern Pushout Cam

LOCATED in the third slot from the left of the lower guide plate, on the stitch regulation lever shaft is thrust bar (13377) Plate 11. This thrust bar controls the action of the pattern pushout cam (13388) Plate 13. The upper end of the thrust bar is set in the thrust bar guide plate (13390) Plate 19 located on the rear, under side of the top bed plate, below the gap closer hinge bracket.

The guide plate is fastened and held in place under the top bed plate by thrust bar guide plate pin (10871) Plate 19 and thrust bar guide plate screw (15521) Plate 19. This guide plate should be fastened securely as there is a good deal of pressure on it when the thrust bar goes into action. It is advisable to check this guide plate to see that it is fastened tightly or trouble may develop.

The spring hook (2478) Plate 19 located on the thrust bar guide plate is for the purpose of attaching the pattern pushout lever spring thereto (11027) Plate 13, and the other end is attached to the spring hook located on the pattern pushout cam lever (13387) Plate 13. This spring pulls the pattern pushout cam out of action when the thrust bar drops off of the drum cam.

One end of the thrust bar spring (6609) Plate 11 is attached to the thrust bar and the other end to the spring hook, located on the lower guide plate. This spring assists the thrust bar in dropping off of the drum cams for a more quick and positive action.

When having trouble with the thrust bar not dropping readily off of the drum cams, set the pattern drum so that the thrust bar does not rest on any drum cams, unfasten the thrust bar spring, and the pattern pushout lever spring from the thrust bar guide plate and the pattern pushout cam lever, then try raising the thrust bar with the fingers of the hand. If there is difficulty in raising and lowering the thrust bar, it may be bent or the lower or top end of the thrust bar may have sharp edges on it, not allowing it to slide freely in the guide plate slots, and perhaps the guide plates may be loose.

The best thing to do is to remove the thrust bar, polish off the sharp edges that slide in the guide plates, see that there are no burrs on the thrust bar, check the guide plates to see that they are tight, and that the slot in the lower guide plate is free from all dirt.

Try raising the thrust bar after being replaced. If the thrust bar does not raise easily or drop freely after the sharp edges have been polished and all the burrs have been removed, the thrust bar itself has become bent so it will be necessary to re-bend it until it does drop freely.

When the thrust bar is dropping freely, attach the pattern pushout lever spring to the spring hooks, located on the thrust bar guide plate and pattern pushout cam lever. This spring should be strong enough to pull the pattern pushout cam out of action when the thrust bar drops off of the drum cams.

Should there be trouble in raising the thrust bar after the pattern pushout lever spring has been attached to the spring hooks, it may be that the pattern pushout lever bracket (4323) Plate 13 does not swing freely on the selector finger shaft (11345) Plates 13 and 14.

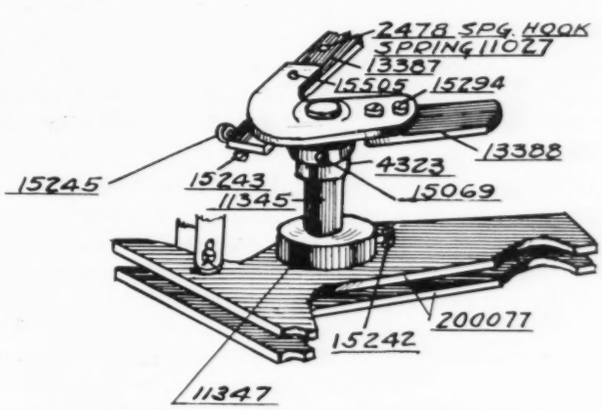


Fig. 1. Plate 13—Model ES Catalog of Parts

*The first article appeared on page 108 of the August issue, the second on page 123 of the November issue, the third on page 112 December 1938 issues, and the fourth on page 106 of 1939 January issue. Thus far discussed are the upper guide plate, the gap closer shaft, stitch cam operating levers, stitch regulating lever shaft, pattern drum, pattern drum friction, drum levers, clearing cam thrust bar, front raising cam, and many other important points.

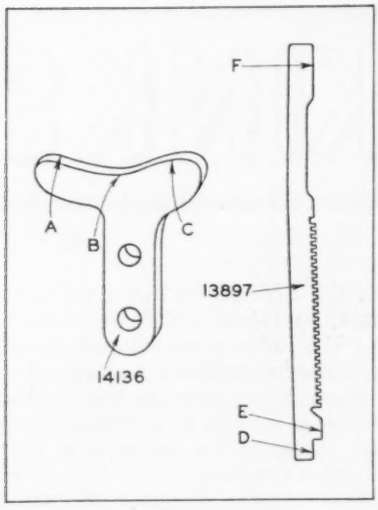


Fig. 2

Be sure to connect the thrust bar spring to the thrust bar and to the spring hook located on the lower guide plate as the thrust bar will not drop without the aid of the thrust bar spring to offset the pressure that is put on the thrust bar when the pattern pushout cam is in action.

A bent thrust bar is caused by various things, such as the pattern pushout lever bracket not swinging freely on the selector finger shaft, pattern pushout lever spring being too strong, and the upper end of the thrust bar, where the pattern pushout cam lever rests, may not be hard enough. The temper may have been drawn out of the thrust bar at one time or another by getting it too hot when grinding or polishing the end of the thrust bar. The same can be said of the pattern pushout cam lever that rests against the thrust bars. When these ends are soft, have them re-hardened as this will cause an easier action on the thrust bar and pattern pushout cam lever.

The thrust bar is operated by the sixth race of drum cams, which are 3/8-inch in height. The thrust bar is raised by the drum cam on the second main rack move at the start of the sock; the raising of the thrust bar puts the pattern pushout cam in action, and it remains in action until the main rack motion goes into the heel. On this motion the thrust bar drops off of the drum cam, allowing the pattern pushout cam to be withdrawn from action. On the main rack move going out of the heel into the foot, the thrust bar is raised by the drum cams, which puts the pattern pushout cam into action, and on the main rack motion from the foot to the ring toe the thrust bar drops off of the drum cam, allowing the pattern pushout cam to drop out of action.

Pattern Pushout Lever Bracket

The pattern pushout lever bracket (4323) Plate 13 is located on the upper end of the selector finger shaft (11345) Plate 14, held against the under side of the left cam ring; it should not be held too tight, but just tight enough so that it can swing freely on the selector finger shaft by the pushout bracket collar (6969) Plate 14. This collar is fastened to the selector finger shaft by the pushout bracket collar screw (15246) Plate 14. Located in front of the pattern pushout lever bracket is the pattern pushout lever bracket set screw (15069) Plate 13. This set screw should be removed from the bracket because the bracket is held up by the pushout bracket collar. If this set screw in the pattern pushout bracket is tightened to the selector finger shaft, it will not allow the bracket to swing freely on the shaft. Instead of swinging freely on the shaft, when the pattern pushout bracket cam goes in or out of action, it will have to turn the selector finger shaft. When all the selector fingers are assembled on the selector finger shaft, and the selector finger springs are fastened in position, the selector finger shaft does not turn very easily. Therefore, it will require a very strong pattern pushout lever spring to pull the pattern pushout cam out of action, and when going into action it will put too much pressure on the thrust bar. This unnecessary pressure is one of the main causes of a bent thrust bar.

The pattern pushout cam is located on the right end of the pattern pushout lever bracket, the cam being fastened to the bracket by two pattern pushout cam screws (15294) Plate 13. Be sure that these screws when tightened hold the pattern pushout cam securely to the pattern pushout lever bracket.

The pattern pushout cam lever is fastened to the pattern pushout lever bracket by the pattern pushout cam lever screw (15505) Plate 13. This is a squarehead screw and it can be drawn up tight after the pattern pushout cam has been properly adjusted by the pattern pushout cam lever adjusting screw (15245) Plate 13. This adjusting screw is held in place by the pattern pushout cam lever adjusting lock screw (15243) Plate 13.

The lower end of the selector finger shaft, on which the pattern pushout lever bracket is located, sits on lower pivot (10875) Plate 15 located on the front left hand side of the jack cam ring (4339) Plate 15, and is held down by the upper pivot screw (11369) Plate 17. This screw is located on the shaft adjusting bracket (14099) Plate 17, the bracket being fastened on the left cam ring, next to the jack gate (100282) Plate 17 by shaft adjusting bracket screws (15278) Plate 17 and shaft adjusting bracket screw washers (15735) Plate 17 and dowel pin (6649) Plate 17. The upper pivot screw must be in line with the lower pivot so that the selector finger shaft will be held straight. The upper pivot screw should be run down so that the selector finger shaft rests on the lower pivot. The upper pivot screw is held in place by pivot screw nut (15955) Plate 17.

The Front Guard Cam

The front guard cam (14136) Plate 15 is located in front of the machine on the jack cam ring (4339) Plate 15, is fastened down by two front guard cam screws (15516) Plate 15. When the front guard cam is set in its proper position, be sure that these screws are drawn tight so that the guard cam has no possible chance to move out of place. In setting the front guard cam, two points that must be set carefully are those at the top right and top left sides, shown in Fig. 2 as points *A* and *C*. Point *A* of the front guard cam should be set so that when the bot-

"For want of a nail the shoe is lost"
OLD SAYING

In a 40-hour week the new READING high-production twenty-six section forty-five gauge full-fashioned knitting machine produces 97 per cent more volume and 116 per cent more value than the ordinary eighteen-section forty-two gauge machine.

TEXTILE MACHINE WORKS • READING, PA.

tom of the pattern jacks (13897) Plate 20 (marked *E* on drawing) comes in contact with point *A* of the guard cam, the pattern jacks will be pushed into the cylinder at all times. Do not set point *A* of the guard cam *in* too far as this will cause the jacks to bind. This binding will cause too much wear on both the pattern jacks and the front guard cam, and the pattern jacks will have a tendency to flip out when making the heel or toe, or whenever the pattern pushout cam is out of action, allowing the pattern jacks to ride up over the jack cam (13331) Plate 15.

Point *C* of the front guard cam should be set so that when the pattern jacks are pushed out by the pattern pushout cam, this point will push the jacks back into the cylinder until the bottom of the pattern jacks *D* are almost flush with the lower cylinder walls (13295) Plate 20. This will allow the pattern jacks, selected by the selector fingers when making the pattern, to extend out far enough so that the butt of the pattern jacks *E* will ride up on the jack cam.

It is best when setting the front guard cams to have the pattern pushout cam out of action. Push the pattern jacks out with the fingers of the hand until it is certain that the guard cam is set in the proper position. Great care should be taken in the setting of this guard cam. Re-check the setting when the guard cam is tightened to the jack cam ring. Be sure there is a little play between point *A* of the guard cam and point *E* of the pattern jacks, and see that point *C* of the guard cam pushes the pattern jacks so that point *D* of the pattern jacks are almost flush with the lower cylinder walls.

When it is certain that the front guard cam is set properly, then set the pattern pushout cam. This cam, when in action, should be set so that it will push the pattern jacks out to the front guard cam to point *B*. Adjust the pattern pushout cam lever adjusting screw so that the pushout cam when in action will not cause the pattern jacks to bind on the front guard cam at point *B*. The pattern pushout cam pushes against the upper part of the pattern jack at point *F*.

When the pattern pushout cam is properly set there should be a little play between point *B* of the front guard cam and point *E* of the pattern jacks. If there isn't any play at these points, the pattern jacks are binding against the guard cam and are apt to be pulled out of the cylinder, causing a smash-up, loss of production, and unnecessary expense.

The same adjustment of the pattern pushout cam and the setting of the front guard cam can be applied to the 25-step HH spiral and 25-step Model K machines and the Standard 80.

Concaving Stitch Cam and Broken Needles

EDITOR COTTON:

1. I am running 48-gauge Banner wrap half-hose machines and am having trouble with broken needle hooks mostly in the heel and toe. I have checked the latch ring and all other parts that I think could cause the trouble, but am unable to eliminate this difficulty. Can some reader of "KNITTING KINKS" offer a suggestion?

2. What is the proper way to concave a stitch cam for a 48-gauge Banner knitting machine? How close to the lower point should this concave be?

CONTRIBUTOR NO. 6899

Wear of Needle Beard

EDITOR COTTON:

"CONTRIBUTOR NO. 6812" asks what causes excessive wear of the needle beard just at the point of press, and says that the wear is caused on a machine where the setting is such that if any more press were taken off, the needles would hang up. The question appeared on page 111 of the July issue of COTTON.

This is a normal condition with which we all have to contend. Last year we re-needled 35 leggers because of worn beards. The wear of the needle beards on some types of full-fashioned knitting machines is greater than on others.

Naturally soft needles will wear faster than hard needles and the needles in all cases should be checked for correct temper. The machine should be gauged also for the correct setting. After this, it is a problem for the machine builder and the needle maker.

If an individual machine is outstanding in the amount of wear, it should be inspected by an expert to see if he can locate the trouble. On one type of our machines, we find it necessary to re-needle about every two or three years because of worn beards.

CONTRIBUTOR NO. 6828

EDITOR COTTON:

As we understand the question, the trouble "CONTRIBUTOR NO. 6812" is having is that he is finding excessive wear on the beards of needles on some or one specific machine, and when the press is relieved enough to stop wear, the beards of the needles are not closed enough at the press point, where the action of the needles, which are engaged in casting off the knitted course or loops as formed, to permit them to be cast off, causing the needles to choke by continuously receiving loops and not cast them off.

If this is correct, it is our opinion that this trouble has been brought about by improper alignment of the needles, and we believe that if the offending machine were re-needled or the needles now present in the machine were properly straightened and aligned, the trouble would be overcome.

It is the practice of some knitters gradually to plier their narrowing points and needles toward the press bar. This will eventually result in the needles that are in normal condition having too much press, and when the actual press for casting off loops is applied, the pressure of the press is not properly applied to the beard of the needle, and is more pressure than necessary, causing undue wear both in the press

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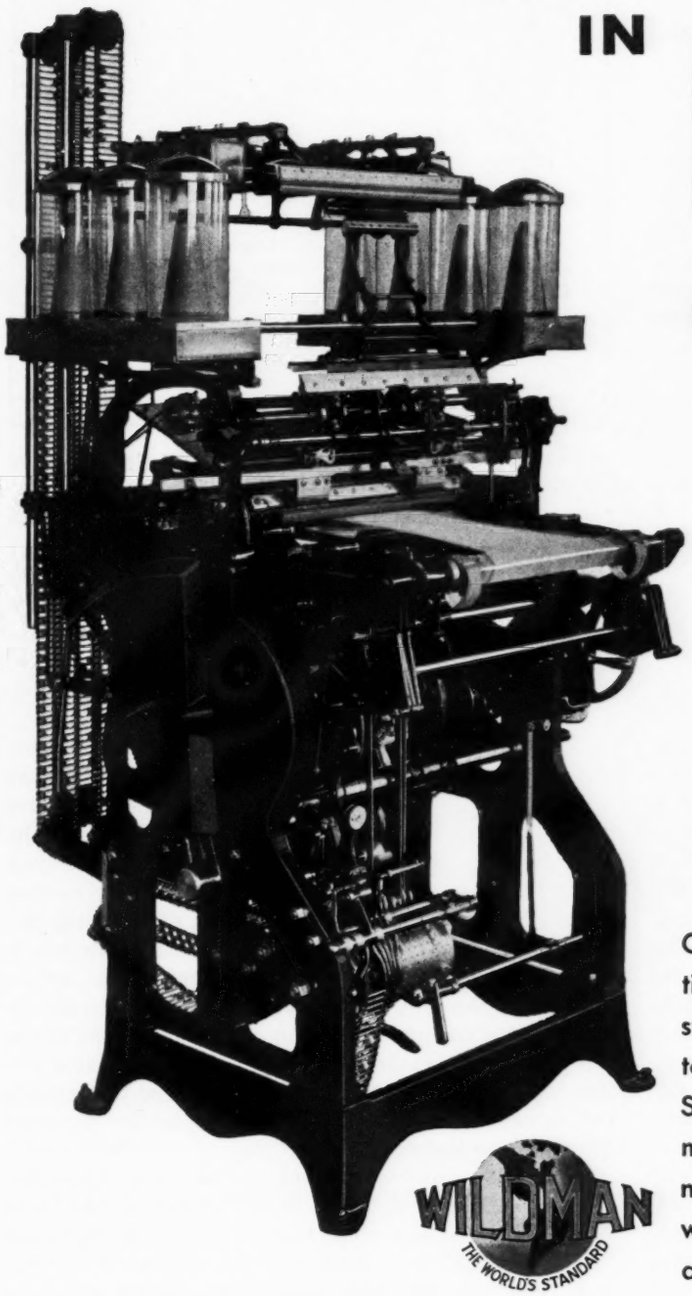

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The Modern

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action and the normal motion of the needle while not at the press point.

We believe that a proper alignment of the needle bar, needles in the bar, and the relation of the needle bar to the press bar, will correct the trouble.

CONTRIBUTOR No. 6829

Unit Heater-Cooler

EDITOR COTTON:

Most of us are familiar with the unit heater; this device has come into prominence during the last generation, and has, to a great extent, replaced steam coils, radiators and other forms of direct heat radiation. Possibly, it has never occurred to many mill men that these same unit heaters can be quickly converted into unit coolers when hot weather comes. This can be accomplished by allowing highly compressed air—previously cooled with water—to expand suddenly within the unit. This principle is known as refrigeration.

Refrigeration by compressed air is not new. Nearly a century ago, Dr. Gorrie, a country doctor in the state of Florida, conceived the idea of making ice for fever patients by using highly compressed air as the freezing medium.

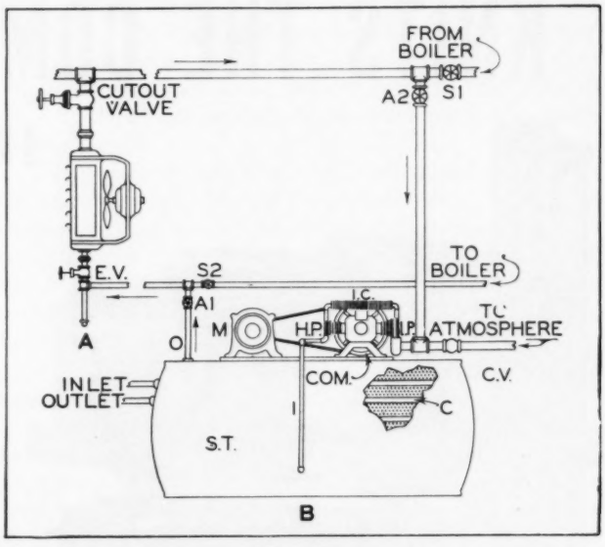
Dr. Gorrie soon discovered that air must be compressed to a liquid state before the expansion of it would produce a freezing temperature. Nevertheless, he succeeded in developing, and patented a machine that did this. The original model of this machine is now on exhibition in the Smithsonian Institute at Washington. Later, it was found that ammonia could be liquefied at much lower pressure than air, so Dr. Gorrie's machine never came into general use.

Freezing temperatures in the mill are not necessary nor desirable; all that we need to do is lower the temperature to 75 or 80 degrees. This can be done by connecting the heaters to an air compressing unit shown in the diagram at "B". This is a two-stage compressor (air-cooled) driven by an electric motor and mounted on the storage tank "S. T." The outfit is similar to those found in large filling stations.

For the benefit of those who may be familiar with the science of pneumatics and mechanical refrigeration; let us review briefly, how the air is compressed and what takes place in the coils of the unit when the air is allowed to expand.

Referring to the illustration B: The compressor is shown at "Com."; it is driven by an electric motor "M." The air is drawn into the low-pressure cylinder "L. P."; there it is partially compressed; it then passes through the intercooler "I. C." where it is cooled; then it passes into the high-pressure cylinder "H. P." where the compression is completed; and it is forced into the storage tank "S. T." through the pipe "I" which enters near the bottom.

In order to conduct the heat generated by the compressed air away as rapidly as possible, the external surfaces of the cylinders and the intercooler are increased by annular grooves or fins as indicated by the vertical lines in the drawings. The driving wheel on



the opposite side is also a fan which helps to drive off the heat that radiates from this surface.

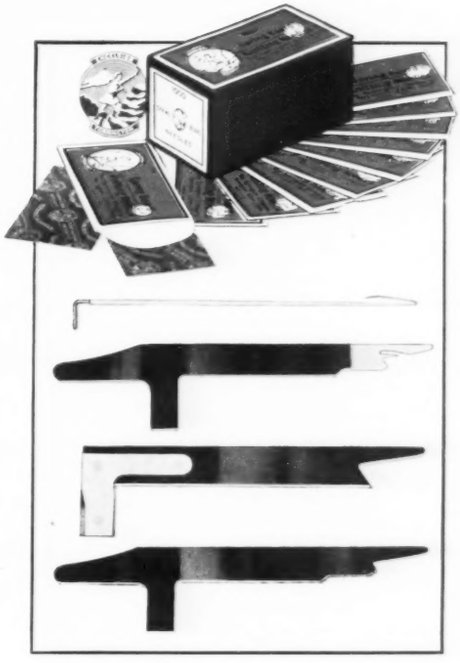
It will be noted that the right hand end of the storage tank is cut away. This is to show the pipe coils "C", through which cold water circulates. As the flow of water in these coils is opposite (from top to bottom) to that of the heat in the tank, any remaining heat is very effectively carried off by the water. The outlet end of the coils may be piped to the feedwater heater, and thus saved for the boiler.

The compressed air leaves the storage tank at perhaps 200 pounds pressure through the pipe "O"—the arrows indicate the direction of flow—and the valve "EV" controls the amount of expansion. When the air expands within the coils of the unit cooler, shown at "A", it takes the heat from them, thereby cooling the surface. The electric fan in back of the unit, circulates the air of the room through these coils which in turn cools it. Thus the atmosphere in the neighborhood of the unit is kept cool. The expanded air returns to the compressor through the larger pipe at the top to be compressed again and start the next cycle. The pipe leading to the atmosphere is used to recharge the storage tank in case it is empty or the pressure drops due to leakage.

To make a unit cooler out of the outfit: Close the valves "S1" and "S2" and open the valves "A1" and "A2". When it is desired to heat the room, the valves "A1" and "A2" are closed, and the valves, "S1", "S2" and "EV" are left wide open so the steam will pass through the larger pipe and the condensed steam will return to the trap through the small one in the usual way.

A unit heater, because it is usually located near the ceiling, is ideal for cooling the atmosphere of the room. As we all know, warm air, being lighter than cold air, rises, while the natural tendency of the latter is to fall to lower levels. So, with the cooling medium at the highest point, a natural circulation is automatically produced. That is why the ice compartment of some refrigerators are at the top.

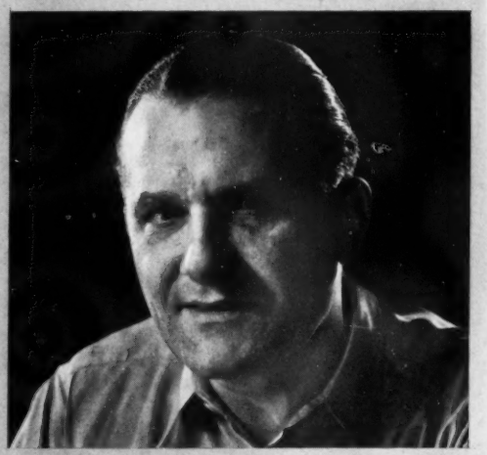
For the sake of simplicity, the expansion valve shown in the sketch is hand operated, but it can be regulated by a thermostat just as well as the steam



"FLAWLESS IN TEXTURE" . . . Because they are "flawless" in texture, says one manufacturer in merchandising his hosiery. Because they are as "sleek as second skin", says another. Because they are "designed for stamina" is the theme song of a third. Theme songs that ring true ring up sales. These are true, as modern women, delighted with the texture, sleekness and stamina of modern hosiery, willingly admit. ¶ Without uniform, smoothly finished, finely tempered needles, hosiery with such appealing qualities could not be produced. With machine-made needles it can be produced consistently. Torrington Needles, favorites among mills which pioneer new standards, are *machine-finished, machine-tempered, machine-tested* to give double assurance of fine quality knitting. Give *your* hosiery line this double assurance.

TORRINGTON *Needles and Sinkers*

15.9% answered "BEST RESULTS" when asked★—Why do you use TORRINGTONS?



AN independent research organization recently conducted a survey in the knitting industry. One of the questions asked was, "Why do you use Torrington Needles?" 15.9% of the executives questioned replied that they preferred Torringtons because they gave "BEST RESULTS."
This 15.9% was but a small part of the entire group which preferred Torringtons—for various reasons. These reasons, given in terse, concise language, express in no uncertain terms the high opinion users throughout the industry hold of Torrington Needles. "They last longer"..."give better service"..."most satisfactory of all"..."more economical"..."have smoother finish"..."most uniform"..."best for our purposes"—are typical of the expressions used.

If you want best results in knitting, use Torringtons—the needles that are *machine-made, machine-tested* to give the best results.

BEST RESULTS means that over a period of years users have found that Torrington machine-made fineness of temper, smoothness of finish and accuracy of dimensions contribute materially to the quality of the knitted fabrics produced with them. These qualities are made possible by special machine manufacturing methods developed and used exclusively by Torrington.

★ **MILL MEN'S REASONS FOR PREFERRING TORRINGTON NEEDLES**

Proved Best	18.2%	High Quality	12.5%
Best Service	17.0%	Better Temper	9.0%
Best Results	15.9%	Last Longer	6.8%
Most Uniform	14.8%	Economy	2.3%
Best Made	13.6%	Smooth Finish	2.3%
Most Satisfactory	12.5%	Miscellaneous	11.4%

Many of the knitting mill executives surveyed gave more than one reason under the above classification for preferring Torrington Needles. As a result, the figures for the entire list total more than 100%.

Knitters throughout the world agree that quality—uniform quality—in needles is vitally essential in obtaining the most satisfactory results in knitting. The precision that only machines can achieve is reflected in the uniform quality of Torrington Needles.

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TORRINGTON *Latch Needles*

end can. Of course, the storage tank is fitted with a pressure gauge and pop-valve.

Some people wonder why a two-stage compressor is used, that is, why is the air partially compressed in one cylinder and then transferred to a second cylinder to be completed. The reason for this is:

The more air that is compressed the higher the temperature rises, and this causes the air to expand, producing a back pressure. So, when the air is partly compressed in the low-pressure cylinder, then cooled by passing through the intercooler, and then completed in the high-pressure cylinder, much of this back-pressure is eliminated and incidentally less power is required to drive the machine.

There is no patent on this idea; indeed, it is not patentable. It is not an invention, just a co-ordination of existing devices; all of which are in use today and can be bought out of stock at any mill supply house.

CONTRIBUTOR NO. 6716

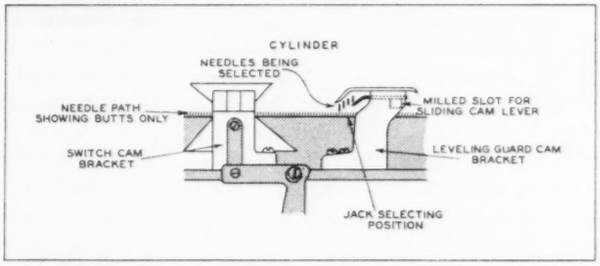
Needle Control Plain Sole

EVERY PERSON whose job is to design patterns or create fabrics to build up a line of fancy hosiery fully realizes the importance of developing something that is distinctive or different. Many and varied are the methods that are available to obtain that touch of distinction that will set a certain style apart from the usual class of goods made on a certain machine.

Sometimes this can be accomplished by clever combinations of yarns that have been considered impractical for use because of inadequate experiments with such yarns. But more often these results are obtained by mechanical set-ups that are different from the ordinary methods commonly used on the particular type of machine on which the hose is to be made. I shall endeavor to explain some of these methods with complete instructions for applying to the machine designated.

There are a large number of four-step Banner wrap machines in operation in many mills throughout the country and no doubt the owners of these machines have been limited in the pattern range from these machines due to the lack of sufficient selective steps, just as I have. I am passing on to you a method of increasing the stepping possibilities of this machine which I have found to be very satisfactory.

As we know, we have four independent steps available and can increase this amount to eight steps by the use of long and short butt jacks. But when a set-up is used requiring both long and short butt jacks we cannot take the pattern out of the sole with the ordinary equipment provided for this operation on the machine. This not only detracts from the appearance of the merchandise but also adds to the cost by the use of so much additional wrap yarn. To prevent this we can install a simple device which



we call a needle control plain sole attachment. This is done as follows:

A slot is milled in the bracket of the front leveling guard cam (see diagram) on the right side to allow the use of a sliding cam bar. A raise cam with a surface parallel with the surface of the guard cam is then welded onto the end of this sliding bar. This cam is fitted so that when in position the lower point clears the needles 1/16-inch. The space between the surface of the sliding cam and the under side of the guard cam is such as to allow the passage of the needles being raised by the sliding cam. The jack selectors are cut off so they will raise the needles only high enough to be picked up by the sliding cam which in turn raises them up to the wrapping position. The sliding cam is controlled from the main drum so that when the machine is knitting the leg the cam raises both long and short needles; but in the foot only the short needles are raised. In this way no matter which needles are selected by the jacks only the needles picked up by the sliding cam will take the wrap yarns.

FRANK BOYD

Strength is Feature of Celanese Product

The following information concerning a new Celanese product was read by Dr. Henry Dreyfus, British Celanese, Ltd., upon receiving the Perkin medal of the Society of Dyers and Colorists at Bradford, England.

Probably the most amazing advance made in the cellulose acetate artificial silk art in recent years is the production of strong yarns. For many years artificial silks have had a lower tensile strength than natural silks, but this has been overcome in the new method of producing cellulose acetate.

It was explained that the tensile strength of steel wire is raised by stretching, and this principle was applied to the manufacture of the acetate yarn. It is said that the problem has been completely solved in the case of cellulose acetate with the result that it is now possible to produce threads having tensile strength up to 6 to 7 grams per denier, which is twice as strong as natural silk, and stronger, weight for weight, than steel. This is also a higher tensile strength, according to the report, than any synthetic fiber. This property is achieved without losing any of the other properties of the yarn, and the product lends itself to saponification to regenerate the cellulose so that the yarn will also take dyes. It can be produced in the very finest of filaments, down to .10 denier.

Certain difficulties have been encountered in connection with dyeing, weaving, and knitting, but these are being overcome, it is said.

The new yarns can be transformed into staple fiber products and may be mixed with the natural textile fibers.

TRENDS and HIGHLIGHTS of the KNIT GOODS MARKETS

Hosiery and Underwear Knitters May Have to Revise Prices Upward Due to Strong Raw Markets—Some Advances In Full-Fashioned and Silk Hosiery Already—Low Prices Named On Lines for Fall—Hosiery Mills Busy—Underwear Spotty

Philadelphia, February 16, 1939

HOSIERY MILLS have been busy. Underwear mills have not as a general rule. Spring prices named by hosiery mills show little change. Prices for fall named by underwear mills show declines from a year ago. With knit goods prices for a new season unchanged or in other instances lower in the face of higher wool, silk and rayon yarn markets manufacturers using these fibers in their garments are confronted with a difficult situation because they had figured profit margins so very small in original prices and paying more for yarns will mean any margins they originally figured upon will be wiped out. This will probably mean mid-season advances in prices of hosiery and underwear. In fact, some makers of silk seamless hosiery as well as some makers of rayon lines have already placed minor advances in prices in effect. Even though underwear mills have not been active the outlook is brighter for them. Outerwear mills had a barely fair spring season but expect a good fall one. Swimsuit makers are busy and will be till June.

Full-Fashioned

Manufacturers of full-fashioned hosiery are beginning to feel the pinch of higher silk prices. The latter is up 20 cents so far this year and up 50 cents from the low of 1938 which means that the prices named for spring will show less margin unless later on goods prices advance. Of course there has been no change in branded prices which were set a month or two back and until these change there is not going to be much change in unbranded although it is largely the latter type that is kicking at the silk advance. The average unbranded mill and small factors in the market cannot buy silk ahead like the large concerns and naturally the advance we have had in silk this year affects smaller mills more for this reason. When and if full-fashioned prices are advanced and if this is enough to change present retail price tags there is going to be an awful howl from retailers who say the present brackets like 69, 79 and 89 cents are well set among consumers and they will hate to change them. Possibly some knitters will do like other trades and turn out a garment to fit the former price bracket because of this. Then again many feel silk is at its peak and that lower prices will come by the middle of the year. Demand for full-fashioned is good and mills in this section are active. They expect a 10% gain over 1938 spring.

Seamless

Seamless hosiery is a feature of the hosiery market and continues to make outstanding gains in the large distributing centers especially the new non-run seamless silks that are being stressed by the nation's largest department stores at prices such as 49 and 59 cents. In Philadelphia, Gimbel Bros., have stressed these at 59 cents a pair with excellent results. They look like the regular knit at five feet but closer inspection reveals that they are a fine net and resemble the mercerized full-fashioned stitches of 1937, somewhat. During 1938 the production of all types of seamless hosiery was about 1,000,000 dozen pairs larger than in the preceding year, a very nice increase, and on a percentage basis the outstanding gain in the hosiery field that year. Style and appearance of women's seamless is gaining so rapidly that they are giving full-fashioned the best run for the money in many years.

Courtesy Se-Ling Hosiery Mills, Inc.

Men's Half-Hose

The short socks with elastic tops are going to be the retail feature of the spring season and will top sales of the same type goods last year by a wide margin. Most retailers say that the average consumer when weather gets a little warm wants the short sock and some retailers assert that more than half, some 75 per cent, of their business this spring will be in the short type. Sales of half-hose have been much larger during recent months and this was reflected in the nice gain in total 1938 production of such lines over the previous year; sales in December over the same month in 1937. Goods to retail at 25 cents per pair are stressed by retailers but they add there is also a demand for bargains like five pairs for $1.00. Knitters have opened wool hosiery lines for next winter with prices approximately the same as for fall and winter of 1938, prices that proved attractive. Sales of wool hosiery have been fair at retail but stocks left over from the previous winter are well cleaned up so that next winter should see a freer movement of these lines than for two years past.

Anklets

This is another branch of the industry that has been making outstanding gains. Production for 1938 was much larger than for 1937 and greatly over 1936. This trend is still in evidence as knitters turn out spring and summer goods. They are mainly of mercerized

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yarns and mercerizers are so busy they have trouble making large enough deliveries. Jobbers report that deliveries of these lines are coming through now and that retailers are enthusiastic about putting them in stock for the coming season. They will retail at the same level as a year ago although there is more demand for goods to retail at 10 and 15 cents than last year; consumers have little to spend, they report, and want cheap goods.

Underwear

Prices for fall have been named by underwear manufacturers and are lower than buyers had expected. In some instances prices are lower than a year ago. These prices mean that underwear will be retailed next fall at the same retail levels and ones that have proved acceptable to the consumer. Prices on the 12-pound suit of cotton rib are around $5.12½ a dozen while some named $5.00 for a grade just below the intermediate. Further easing of underwear prices is not expected by buyers who admit that manufacturers have named the lowest possible prices. This may mean that early buying will be seen by the largest operators, because there is a firmer trend in yarns including single combed as well as those to go into the wool and part wool underwear.

Nylon Stockings at Two Worlds Fairs

First public display of women's stockings made by nylon, new DU Pont synthetic yarn, will be at the World's Fair at San Francisco opening this month. The stockings to be displayed will be service-weight although the DU Pont company announced that nylon filaments can be spun much finer than filaments of silk and rayon. It is also understood that nylon stocking will be displayed at the New York World's Fair which is scheduled to open later in the spring. Strength and elasticity, two major features of the new yarn, which is made chiefly from coal, water, and air, will be demonstrated at San Francisco by mechanical hands stretching a nylon stocking continuously. A fountain composed of thousands of nylon filaments, animated by air currents and spotlighted, will form the stage setting for the display.

The company previously announced it will spend more than ten million dollars in the construction of a plant for the making of nylon yarn at Seaford, Del., and the plan for the manufacture of intermediate materials at Belle, W. Va. Over eight million dollars will be required to build the yarn plant and over two million dollars for the intermediate plant. Commercial application of nylon to date has been confined to the production of Exton bristles for use in tooth-brush manufacture. These bristles are fully equal to the best natural product and are said to surpass it in durability. In studying the outlook in connection with these new synthetic yarns hosiery manufacturers have become convinced that it will not have to depend wholly upon one source for the new yarns that are expected gradually to replace silk during the next five years nor must it fear that the arrival of such yarns will automatically remove the need of costly throwing plants that many mills have erected in recent years. Mill men say the new products will have to be thrown and finished by the same processes now employed in the handling of silk. High, low and compensated twists will continue to be required and in this connection the trade understands that none of the producers of these new yarns expects to build or operate throwing departments.

FORECAST

(Opinion submitted by COTTON'S market correspondent.)

Philadelphia, February 16, 1939

Most of the gains registered in textile production during the latter half of 1938 have been maintained but not expanded further during the present year to date. For the present most textile manufacturers in buying their raw materials show a more cautious attitude and are content in most cases to consume yarns or raw materials previously contracted for and place little new. This policy in silk has worked against the manufacturers because silk has advanced to a new peak this month, causing worry to hosiery manufacturers that based their spring goods prices on lower raw material than now current.

The European war scare and the unfavorable shopping weather during the latter half of January and early in February are reasons why the impetus of late 1938 did not carry through but most feel that this is a period of consolidation of previous gains and that the year will develop into a better one than 1938. There is complaint from manufacturers that they are not making money in proportion to the gains in production but some lines such as full-fashioned hosiery are making more money, this being reflected in 1938 statements as compared with those by the same firms for 1937.

There have been only minor price changes this month in cotton and rayon, but silk and wool have been stronger. The action of silk, while predicted here several months back, has taken most manufacturers unawares, especially the smaller plants. The uptrend in wools has brought about minor worsted yarn increases but these have not as yet been important. While the trend in textile fiber prices is apt to be steady, indications are that no great advances are in the immediate offing. Silk will remain firm for the next few months after which it may soften again; cotton is not going to change much; wool will be steady and may increase slightly more before the new clip comes on the market; rayon is not going to change further shortly but later on will see conservative price increases.

This means that manufacturers in buying yarns or commodities can be a little more liberal than they have been but that caution should still be a purchasing watchword. To buy to fill orders in hand is being done and most are content to work on this basis but manufacturers can go a little more ahead than they have been with safety. This does not apply to silk because if they had not covered about three months ahead before the $2.00 level was reached then they should now only buy as needed, meaning only a few weeks ahead at a time.

Indications are that most knit goods manufacturers are going to be busy for the next few months but prices of goods are going to remain low and profit margins small. This places more emphasis on efficient machinery. For example, in full-fashioned machinery it is pointed out that the new 26-section, 45-gauge full-fashioned knitting machines can in a 40-hour week produce 97 per cent more volume than the ordinary 18-section, 42-gauge machine of a few years back. The same trend is apparent in spinning and in other branches of the industry, making it very difficult for mills with out-of-date equipment to compete.

Underwear Outlook for 1939 Improves

The underwear industry definitely faces a better than normal year, the Underwear Institute recently pointed out, adding that from present prospects it seems not at all unlikely that 1939 production will run from 10 to 15 per cent above that of last year. The combined output of all types of knitted underwear, plus men's woven shorts, for the year 1938 is estimated at 37,000,000 dozens, the smallest production since 1934. Shipments that year totalled approximately 38,100,000 dozens, reducing mill inventories 1,100,000 dozens, or about 16 per cent from the inventories of the previous year. The Institute pointed out that the encouraging aspect of curtailed operations last year is the knowledge that it was essential to a liquidation of heavy stocks accumulated by both distributors and mills

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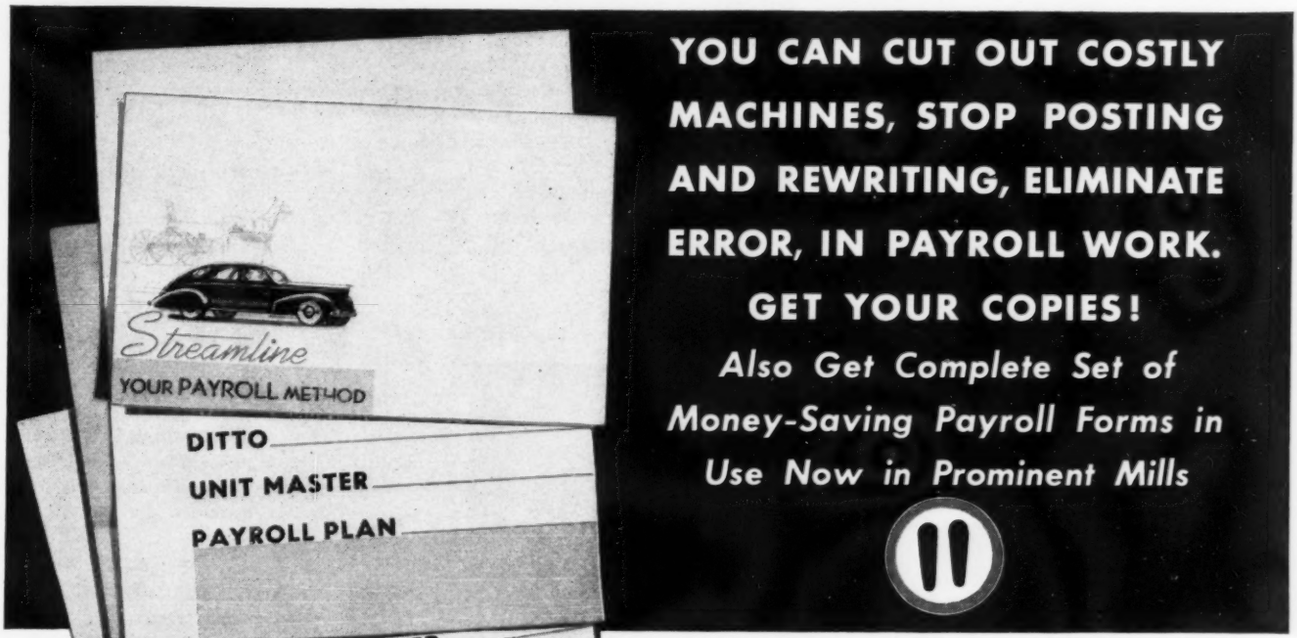
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Town.....*State*.....

during the unfortunate spurt of 1937. Retail stocks have long since been reduced to normal and mill inventories are at about 5,500,000 dozens which are also once more normal, and it is believed also that wholesale shelves have finally been cleared of the abnormal burden which has been particularly depressing during the current heavyweight season.

It also points out that having gone through the unpleasant but necessary curtailment of 1938 the industry very definitely faces a better-than-normal year in 1939 which also corresponds with the upturn of the textile cycle. Nothing like the speculative buying that occurred late in 1936 and early 1937 is expected but there probably will be some stimulating effect due to increased costs from labor and raw materials arising from the wage and hour administration. New orders during the last few months have been larger than in the corresponding months of the previous year and the backlog of unfilled orders is once more showing a gain over the previous year.

Hosiery Committee Named By Andrews

The Hosiery Industry Committee under the wages and hours act has been named by Elmer F. Andrews, Administrator of the Wage and Hour Division of the Department of Labor, and is headed by Dr. George W. Taylor, economist of the University of Pennsylvania and well known for his research in the industry. Dr. Taylor is on the public branch of the committee which is made up of fifteen members, five each for the public, the employes and the employers. The duties of the committee are to study the conditions in the industry and then recommend a minimum between the present 25 cents an hour and the final 40 cents, provided that the rate will not subsequently curtail employment.

Mr. Huffman

Dr. Taylor

Besides Dr. Taylor the members for the public are: Miss Rosamond C. Cook, home economist, University of Cincinnati, Cincinnati, Ohio; Dr. John C. Evans, economist, Albright College, Reading, Pa.; Stanley B. Hunt, editor, *Rayon Organon*, New York, N. Y.; Capus Waynick, editor, *Enterprise*, High Point, N. C.

Representatives of employes are: Alfred Hoffman, research director, American Federation of Hosiery Workers, Philadelphia, Pa.; William Leader, president, Branch No. 1 of the hosiery union; Thomas Lehmann, chairman, Seamless Negotiations Committee of the hosiery union, Milwaukee, Wis.; Emil Rieve, general president of the hosiery union, Philadelphia, Pa.; W. C. Stallings, member of the national executive board of the hosiery union, Durham, N. C.

Mr. Meyer

Mr. Mettler

The employer representatives are: John M. Berry, Rome Hosiery Mills, Rome, Ga.; J. B. Glasner, Rockford Mitten & Hosiery Co., Rockford, Ill.; R. O. Huffman, Morganton Full-Fashioned Hosiery Co., Morganton, N. C.; John Wyckoff Mettler, Interwoven Stocking Co., New Brunswick, N. J., and William Meyer, Apex Hosiery Co., Philadelphia.

Mr. Berry

Mr. Glasner

The first meeting of the hosiery committee was scheduled for February 23 in Washington. The National Association of Hosiery Manufacturers in connection with this meeting took occasion to advise the industry against taking long term orders whose delivery dates might extend into a period of higher wages. The association reminded manufacturers that the present statutory minimum wage of 25 cents an hour automatically becomes 30 cents an hour on October 24, except for any lower minimum which the administrator might approve for learners, apprentices, and handicapped workers. Also the present 44-hour week at regular rates of pay becomes 42 hours in October, it pointed out further. It is expected by the industry the committee will consider separate minimum wages for the full-fashioned and the seamless ends of the business. Within the latter consideration will doubtless be given to a differential to apply to operations engaged in the manufacture of low end goods where cost is a consideration to the consumer and profit margins very narrow.

Throwsters Denied Learner Exemption

The Throwsters Research Institute application for permission to employ learners at less than the 25 cents an hour minimum provided by the Fair Labor Standards Act was denied by Merle D. Vincent, chief of the hearings and exemptions section, Wage and Hour Division, Department of Labor. Mr. Vincent made the following findings: 1. The work in the throwing industry is light and easily learned. 2. Few newcomers into the industry are dropped because they fail to reach reasonable efficiency in a short time. 3 Most plants in the industry do not have a learner classification. It has not been the practice in most plants to employ beginners in occupations or operations requiring skill at a wage lower than that paid employes in the skilled occupations or operations. 4. Skilled occupations or operations requiring a learning period are filled from the ranks of unskilled or semi-skilled labor in the industry. Employes while engaged in the unskilled operations acquire the requisite knowledge of the skilled occupations or operations.

Acting for the Throwsters Institute, George A. Urlaub, executive director, appeared at a public hearing in Washington last November and asked that the throwsters be allowed to employ learners up to 5 per cent of the total number of employes in the mill at 70 per cent of the minimum wage provided in the Wage-Hour Law for a period of not more than twelve weeks. He said the throwing industry operated about 300 plants and employed approximately 50,000.

Rosedale Employes Hit Closed Shop Pact

The Rosedale Employes Association on February 8 charged the Rosedale Knitting Co. of Reading, Pa., with unfair labor practices in a complaint to

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the National Labor Relations Board, asserting that the company by a closed-shop contract with the American Federation of Hosiery Workers and by various other acts interfered with, restrained and coerced its employes in the exercise of their rights. The association claimed it represented 1,400 of the 2,700 employes. The only other labor organization which claims to represent any of the employes is the American Federation of Hosiery Workers, the complaint said, adding that the union represents only about 400 employes. The company signed a contract with the union on August 31, 1938. The association charges that this agreement violates the provisions of the National Labor Relations Act because the American Federation of Hosiery Workers, it claims, has never been designated or selected for the purposes of collective bargaining by a majority of the employes of the company or any appropriate unit thereof or by the National Labor Relations Board.

Spinner Honored by Outerwear Manufacturers

The sales worsted spinning trade was honored at the annual dinner of the Philadelphia Branch of the National Knitted Outerwear Association held February 9 when the award for distinguished service to the industry during the year went to John Sichel, of Dearnley Bros., Worsted Spinning Co., Inc. It was the first time this award went to one not a knitter. William Portner of the Franklin Sweater Mills, who made the presentation, said it was felt that owing to Mr. Sichel's co-operation with the knitters they were for the first time making the award to a spinner. Mr. Sichel started business with the Pennsylvania Knitting Mills and later went with the knit goods firm of Gruslaw & Sichel. After liquidation of that firm in 1931 he went with the Dearnley Bros. Worsted Spinning Co., Inc. Present officers of the association were re-elected with A. H. Liebster of the M. & M. Knitting Mills as president.

Durene Presents Film on Underwear Qualities

The Durene Association of America has launched an intensive campaign to increase the sale of merchandise made of Durene mercerized cotton yarn and in this connection is showing a sound slide film "King Cotton's Crown". The film dramatizes those qualities in finished garments which focus on Durene yarn including the absorption and evaporation power of the yarn. Tests made by the United States Testing Co. prove that undergarments of Durene cotton yarn absorb and evaporate perspiration twice as fast as garments made of ordinary cotton yarns. What this means in terms of comfort and health protection is emphasized in the film. Interest of both manufacturers and retailers is being enlisted as regards proper identification of merchandise made of Durene yarns. Tags and stickers have been made available as well as sales training booklets. Retail sales personnel are being instructed regarding the merits of Durene yarn and the reasons why Durene underwear represents maximum value for money spent.

Govt. Bureaus at Odds on Homestead Projects

In response to a question by a hosiery manufacturer regarding the status of the loans by the Farm Security Administration for the construction and operation of hosiery mills on homestead projects by Dexdale Hosiery Mills, Acting Comptroller General R. N. Elliott replied as follows: "You are advised that by decision of December 6, 1938, it was held by this office that on the present record the funds appropriated to the Secretary of Agriculture by the Emergency Relief Appropriation Act of 1938 for administration, loans, relief, and rural rehabilitation for needy persons, are not available for making loans of the character in question. At the present time there is nothing before this office requiring further consideration of the matter." The Administration has voiced its determination to go through with the project, it will be recalled, while apparently the comptroller's office continues to put thumbs down on the plan.

Pennsylvania Mills Buy New Machines

In accordance with the new union wage contracts numerous manufacturers of women's full-fashioned hosiery in Pennsylvania have been placing orders for new knitting machines, this being one of the stipulations in the contracts with the American Federation of Hosiery Workers. Savings in labor costs are to be used to bring their equipment to a more efficient basis. Manufacturers in Philadelphia in some instances have already installed new machines. Those mills which have just recently come to an agreement with the labor union and now are ordering full-fashioned machines report that the machinery builders are so rushed with orders from all sections of the industry that they are unable to promise delivery earlier than five months ahead. Philadelphia mills have been buying 45- and 51-gauge machines with only scattered demand for 54-, 57- or 60-gauge. There are a few 54-gauges in use in Reading but none in Philadelphia so far as is known and knitters also state that 48-gauge is not wanted. Manufacturers who install the latest equipment make it difficult for mills with old machinery to compete. In a 40-hour week the new high production 26-section, 45-gauge full fashioned knitting machine produces, it is claimed, 97 per cent more volume and 116 per cent more value than the ordinary 18-section, 42-gauge machine.

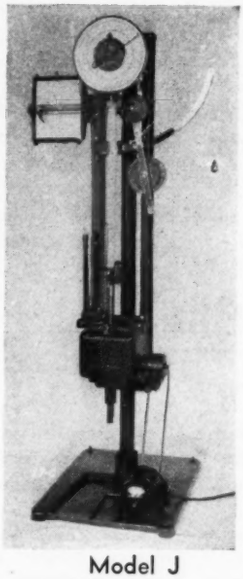
Oscar Nebel Co., Inc. Files Reorganization Petition

A petition to reorganize under the terms of the Chandler Act was filed February 6 in the Federal District Court at Philadelphia by Oscar Nebel Co., Inc. manufacturers of full-fashioned hosiery with principal offices in Philadelphia. Judge George A. Welsh appointed two trustees, George McHugh and Harry E. Schoenhut, an officer of the debtor firm, and he directed them to prepare a plan of reorganization within sixty days. He set April 5 as the date for a further hearing to determine whether the appointment shall be made permanent. Debtor's petition stated that it was solvent but without cash or liquid assets to meet current and maturing obligations, especially accumulated dividends on the preferred stock. It is understood several holders of the stock had threatened court action to force payment of dividends and it was because of this that the step looking toward reorganization under the Federal act was taken. The petition sets forth assets with book value of $1,338,454 and liabilities of $212,180 with "fair value" of assets listed at $497,922.

North to Demand 40-Cent Fashioned Hose Minimum

It is predicted that Pennsylvania and Wisconsin full-fashioned hosiery mills, nearly all of which are unionized and paying higher wages than prevail in the South, will demand that workers in their field be paid at least 40 cents an hour when the hosiery committee begins its sessions in Washington. The full-fashioned division is virtually on a 40 cent minimum basis in the North already. Argument on behalf of this

SCOTT TESTERS



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rate consequently will be reinforced by proof of its practicability. Whether the South has any intention of resisting a 40 cent rate is not known at present time but there is at least a possibility that no fight on the proposition will be made, especially as some of the leaders in the southern field are already paying about as much as some Pennsylvania mills are paying under individual contracts with the union. The American Federation of Hosiery Workers, which has found it impossible to organize the southern full-fashioned field, is naturally hopeful that any new minimum for knitters will bring about an upward revision of rates in the South. The real fight may revolve about seamless wages, where it is possible the union may demand a 30 cent minimum.

Penna. Judge Scores Picketing by Non-Employes

Picketing of a business establishment by persons not employed in the place is not justified according to Associate Justice William I. Schaffer in the Pennsylvania Supreme Court. Justice Schaffer's expression came in the appeal of the Knit Goods Workers Union, Local No. 190, affiliated with the International Ladies' Garment Workers Union, from the action of Court of Common Pleas No. 3, of Philadelphia in granting an injunction restraining the union and its members from picketing the Yale Knitting Mills, Inc. The union sought to unionize the Yale plant although the 28 employes refused to join the union.

"The employes are not picketing," remarked Justice Schaffer. "They are outsiders in the sense that they are not employes of the Yale Knitting Mills. I am amazed that this sort of thing is going on. There is nothing to justify it and if it is allowed to continue then it will cease to be a land of liberty". The union attorney countered with the assertion "This practice has been going on for half a century and the courts have upheld the right to picket. Economic organization today is not based on a single shop. Unions believe that wages may be increased and collective bargaining maintained only if union conditions prevail in the whole craft."

Raw Silk Advance May Force Higher Hosiery Prices

Many manufacturers of full-fashioned hosiery either through definite policy or because of inability to finance have been buying raw silk only a few weeks ahead. This has applied particularly to smaller manufacturers making unbranded merchandise, it being believed that the larger concerns making branded goods covered farther ahead. In view of the sharp advance in silk over the past month manufacturers and particularly makers of unbranded hosiery have been hit by higher silk costs. They have been unable as yet to pass this advance in their raw material along to their customers so that it is being predicted that if silk advances further there will have to be a mid-season advance in prices and it is possible that this will also have to be followed by makers of branded goods. Some feel that if silk goes up another 15 or 25 cents that branded mills would be forced to advance their lines before the present season is over. A somewhat similar situation has arisen in heavyweight underwear on which manufacturers recently named new prices lower than a year ago. Here too knitters are confronted with higher yarn prices, which have strengthened since their new season opened, so that they too may adjust.

An Eye on the Knitting Mills

A hosiery mill designed to employ about 400 persons will be located in Jackson, Ala. The building, to be erected by citizens of the town, will cost $55,000. It is understood that 24 modern full-fashioned machines costing about $15,000 each will be installed in the plant. Only high school graduates will be employed.

Pilot Full-Fashioned Mills, Inc., Valdese, N. C., have ordered for Schubert & Salzer 45-gauge, 28-section single-unit machines with automatic welt turners from Alfred Hofmann, Inc. These machines are in addition to recently installed single-unit knitting machines.

Blue Ridge Hosiery Mills, Marion, N. C., will remodel the present building to increase the capacity of the plant. A boiler room will be built and a dyehouse installed. 30 new knitting machines, 9 loopers, and two table boarders will be installed.

Bankhead Homesteads (near Jasper, Ala.) which will operate one of the re-settlement hosiery mill projects, has sent a group of boys to a mill near Pittsburgh, Pa., to study the operation of the machinery. Other groups will be sent later.

Machinery for a new full-fashioned hosiery mill is being installed in a building at North Wales, Pa. It will be operated by George Wetzel. The plant will begin with four knitting machines and four auxiliary machines.

Kayser Hosiery Company, Hattiesburg (Miss.) branch, is installing machinery as it becomes available. The machinery, of foreign make, was delayed in arrival because of events transpiring in Europe.

Dothan (Ala.) Silk Hosiery Company has purchased benches, tables, and chairs, the equipment being supplied by G. W. Morton Manufacturing Company, Greensboro, North Carolina.

Elder Finishing Mills, Inc., Burlington, N. C., has been incorporated to manufacture and sell knit goods, yarns, hosiery, etc.

A hosiery mill, formerly located at Graysville, Tenn., has been placed in operation at Dayton, Tenn. Over 100 persons are employed.

Funds have been raised by citizens of Madison, N. C., which assures the location of a large hosiery mill in that city.

Wyatt Knitting Company is the name of a new hosiery mill to be located at Sanford, N. C. Operations are expected to begin during April.

Runnymede Mills, Tarboro, N. C., has installed 24 automatic knitting machines to manufacture rayon and silk socks.

Jackson County Mills, Pascagoula, Miss., will double its capacity by adding 200 sewing machines and 45 knitting machines.

Dunn (N.C.) Hosiery Mills, Inc., have been formed to manufacture hosiery and other knit goods.

Whisnant Hosiery Mill, Hickory, N. C., has let contract for an addition of 15,000 square feet.

Trylon Knitting Mills, Inc., Brooklyn, N. Y., has been incorporated.

The Bradley Knitting Company, Delavan, Wis., has installed new machines in the knitting and finishing departments, which increase the production and permit greater employment.

Kenmore Hosiery Company, Fredericksburg, Va., has installed 21 additional machines which doubles its capacity. Full-fashioned silk hosiery is manufactured.

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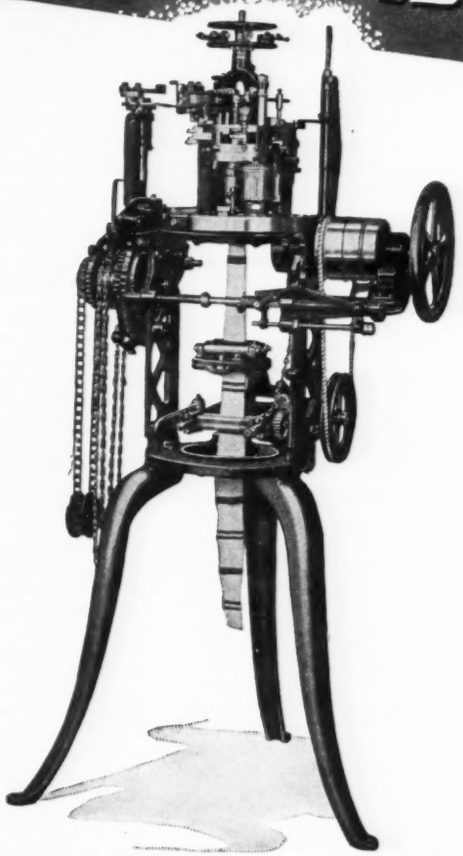

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TRENDS—THE YARN MARKETS

Sharp Upturn In Silk Features Trading—May Mean Higher Hosiery Prices—Worsted Yarns Also Strong Due to Firm Raw Situation—Rayon Knitting Cones Harden—Cotton Yarns Less Active But Steady

Philadelphia, February 16, 1939

A SHARP BUT PREVIOUSLY PREDICTED UPTURN in raw silk occurred during the last month, prices being about 18 cents up in this time, bringing silk not only to a new peak for the last year but to a level more than 50 cents above that of June, 1938, when around $1.50 was hit. The high of 1938 was in February when $2.10 for double extra cracks was reached. The recent level has been slightly over the $2.00 mark so that most in the trade feel that silk is not apt to go much higher but that shortly it will react; that hosiery men should not now reach too far for it. Due to a firm wool market here and also abroad wools and tops have hardened somewhat over the month and this has brought about a firmer yarn market; knitters find, however, that for the present they can locate old prices without trouble. Cotton yarn new business has been quiet but deliveries good while prices were staying about where they were. Rayon knitting yarns are firmer, Industrial issuing a new list in the last few days but no changes took place in weaving. Knitting had been selling previously under the nominal list.

Cotton Yarns

Cotton yarns have not changed in price importantly but actual selling prices have declined approximately one-half cent, largely due to a lack of demand for new business. Manufacturers are taking fair to good-sized deliveries on old contracts but when they place new orders these are only of a fill-in type. Under these conditions there has been more pressure to sell than there has been willingness to buy. The result has been that yarns such as super-carded knitting and single combed have been selling at prices slightly under those of a month ago, with this being more apparent in carded. Late in January combed spinners made an attempt to raise prices of knitting yarns one cent but since that time new business has been so quiet that not only have they been unable to secure this advance but at present they are finding it difficult to sell at the prices of a month ago.

Deliveries of single combed and mercerized on old contracts have been very good, in many cases being as large in these two types of yarn as such producers can turn out. Deliveries of mercerized yarns were good in January, as they had been previously for about six months but since the beginning of February poundage on old orders has expanded further and at present is at the best rate for many months. Large amounts of mercerized yarns are going into the manufacture of anklets, children's hose and now producers of such yarns are making a stronger effort to expand the consumption in the underwear field where they stress the greater absorption qualities of mercerized yarns as compared with the ordinary qualities. From the large deliveries now being made in single combed to knitters of such popular garments as men's athletic shirts it is apparent that many knitters at present prefer to pay the very small margin above the price of good grade carded knitting yarn in order that they can insert a "combed" label in the garment.

Although there is plenty of cotton around and in fact a considerable excess, combed spinners assert that there is a relative scarcity of the longer staples of the type which have not gone into the government loan. Cotton of one-inch staple and longer would come into this classification and this is the type that both combed spinners and mercerizers say is very strongly held in the South, and on which high premiums are demanded. This condition in the raw material market may cause a strengthening in the prices of combed yarns made from such cotton and this may become more apparent in the next few months before the new crop comes on the market. It is also a factor that may bring about additional firmness in mercerized yarns which have recently been displaying a firmer trend although quoted no higher. In this connection, mercerizers have made no official change in their selling list for many months, such yarns being held on the basis of 63 cents for 60s two-ply ungassed.

Silk

There has been a sharp upturn in the price of silk over the last month and this movement has reached a stage where it is causing considerable worry to manufacturers of silk hosiery who have recently named their prices for the Spring season at unchanged prices. This means that some hosiery mills are quoting the same prices for their product as they were when raw silk was selling 50 cents a pound less. The impression is that if raw silk advances another 25 cents manufacturers would have no alternative but to raise their hosiery prices. The advance in silk has been due to two distinct developments to which attention has been devoted in these columns during recent issues. These are a decrease in production of silk in the face of increased consumption not only in the United States but also in Japan. The hosiery industry in the United States is operatin gat an active rate and consuming silk at a fast pace and in addition to this weavers of women's dress fabrics are consuming silk at most active rate for a long period, largely due to the low prices that are being quoted on pure dyed silk fabrics, bringing them down to a more competitive basis with rayon.

Consumption of raw silk during the first month of this year jumped to 40,816 bales which was greater than had been expected. December consumption amounted to 35,204 bales while mill takings during January 1938 only totaled 30,715 bales. At the same time that the American consumers have been taking larger quantities the production in Japan of raw silk has been curtailed somewhat by the long drawn out hostilities in the Far East and also that consumption of silk in Japan has been increasing with the result there is no over abundance of silk for export. Under these conditions the outlook is for continued firmness but most of the trade feel that if prices have not already hit their peak they are very close to it so that they are not reaching for additional quantities.

Rayon Yarns

Although several producers have issued a new price list for knitting cones, these yarns are gradually strengthening due to a larger demand and an improvement in the inventory position of such producers. Effective February 10th the Industrial Rayon Corporation established a 47 cent basis for unbleached 150-denier knitting cones which was in line with tendencies toward a firming up of the knitting yarn situation noted previously. Only a short time ago the market had traded down to 45 cents on knitting cones of this description. Industrial's new list also establishes a differential of 2 cents a pound between the prices of bleached and unbleached oiled knitting cones of 150-denier and heavier. Bleached weaving cones remain unchanged from the generally prevailing market, 150-denier holding to 51 cents.

Worsted Yarns

Wool and tops both spot and futures have been strong during the last month and in fact spinners claim there has been sort of a squeeze in fine tops. In addition to this spinners of knitting yarns largely made from medium grade wool say there is a tight spot situation in such domestic wools. With this condition in the raw market the trend of worsted yarn prices has been upward and some spinners are asking 2½ cents more than a month ago but it has been impossible as yet to secure the advances in any large quantities. Outerwear manufacturers had a fair spring season while makers of bathing-suits have been and are busy. The latter will continue so until June. The outlook is for a good fall season in sweaters but the difficulty is, so far as worsted yarn spinners are concerned, that other type yarns are being used in a large portion of this business.

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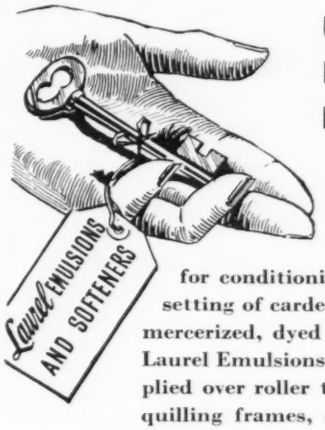

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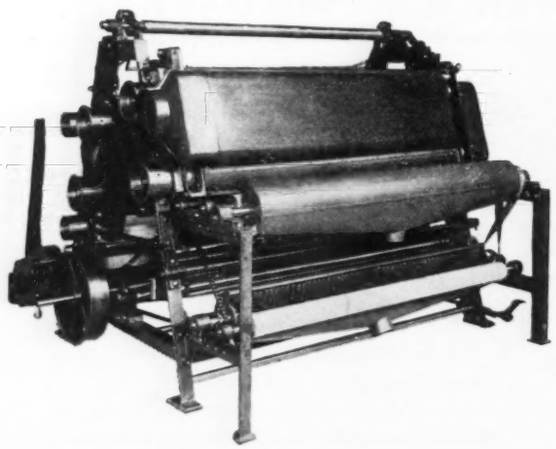

NEW AUTOMATIC 4-KNIFE SHEAR—WITH AUTOMATIC SEAM PROTECTOR (See it at Greenville).

Typical of many fine machines for Inspecting, Shearing, Folding, etc.

A Hermas Shear will clean all hanging threads from the face and selvage of all your fabrics, cheaper and more effectively than they can be removed in any other way.

If the mechanical equipment of your clothroom is not of the approved modern type, you are losing something on every yard of goods you manufacture,

In these days ¼ to ⅛c gain or loss a yard is important to you. Why not

INVESTIGATE HERMAS CLOTHROOM EQUIPMENT

AT THE GREENVILLE SHOW

You can see our AE Shear and our "GF-290" Measuring and Examining machine. Representatives will be there to give you facts and figures that may save you thousands of dollars in your clothroom.

HERMAS MACHINE COMPANY, Inc.

HAWTHORNE, *Specialists in Clothroom Equipment* **NEW JERSEY**

Carolina Specialty Co. Charlotte, N. C.

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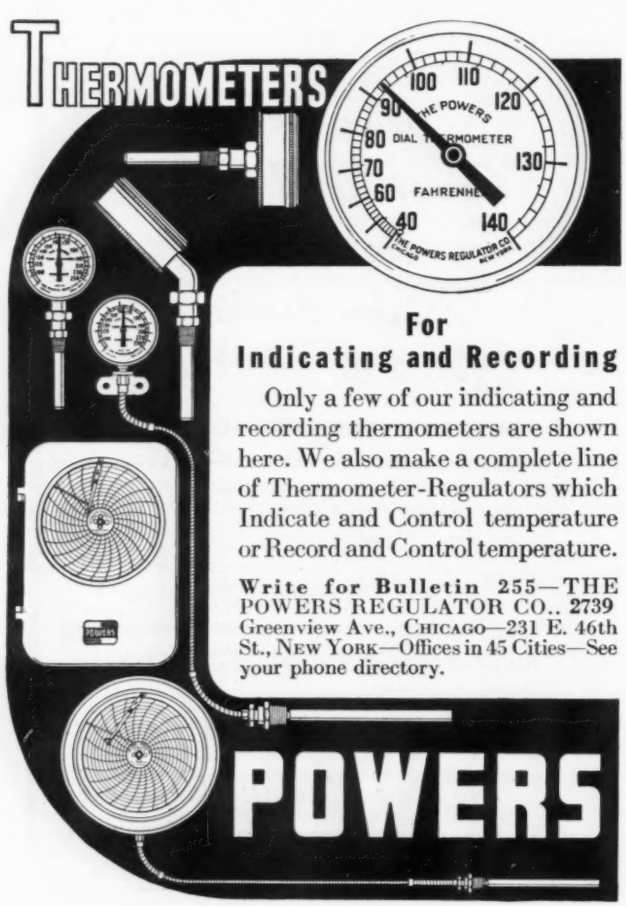

For Indicating and Recording

Only a few of our indicating and recording thermometers are shown here. We also make a complete line of Thermometer-Regulators which Indicate and Control temperature or Record and Control temperature.

Write for Bulletin 255—THE POWERS REGULATOR CO., 2739 Greenview Ave., CHICAGO—231 E. 46th St., NEW YORK—Offices in 45 Cities—See your phone directory.

"The Roving Frame"

by Fay H. Martin

Every carder, frame fixer, section man, and superintendent will find "The Roving Frame," by Fay H. Martin, an instructive pamphlet. Mr. Martin, who has long written articles for "Cotton," clearly interprets draft, twist, lay, tension, pressure of the presser, hyperbola curve, the winding of the bobbin, reverse twist on the roving frame, roving frame cones, tensions and compounds so that the student or practical man will profit by his explanations.

This is a reprint of 26 pages 8½ x 11 of a series of articles which were previously published in "Cotton," containing valuable information, illustrations, tables, charts and diagrams.

Fay H. Martin is a recognized authority on the roving frame. This book has been adopted by textile schools and vocational schools. Price per copy $1.00 (or it may be secured in conjunction with a 3-year subscription to "Cotton" for $2.50 (Canada $4.00—Foreign $5.50).

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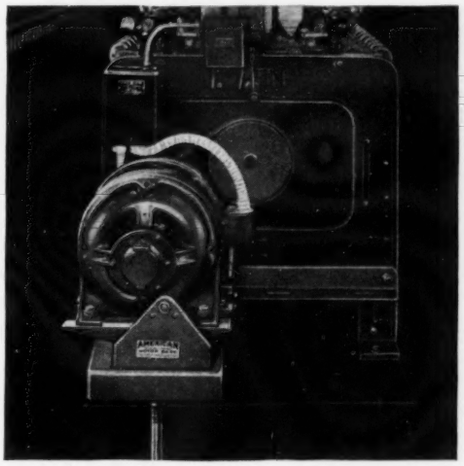
Grant Building, Atlanta, Ga.

"TENSION CONTROL" MAKES SHORT CENTER DRIVES SELF-SERVICING



Constant belt tension means costly operation. If tension is established to take care of starting and other occasional peak loads, it imposes a killing burden upon belts and bearings. If the tension is adjusted for normal running loads, belt slip and loss of production result during exceptional power demands. The belt tension *must* be varied to suit the load.

The *only* satisfactory means of matching belt tension to varying power demands is the "American" Tension Control Motor Base. This Base immediately and automatically adjusts itself to the correct tension to operate flat or V-belt drives under any load at the highest efficiency. This equipment completely eliminates all maintenance and service problems. "American" engineers will demonstrate in your own plant the savings this equipment makes possible.

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For Overseaming and Overedging with maximum efficiency at high speed and low operating cost modernize with the new

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On display at the Southern Textile Exposition, Booth 237, week of April 3rd.

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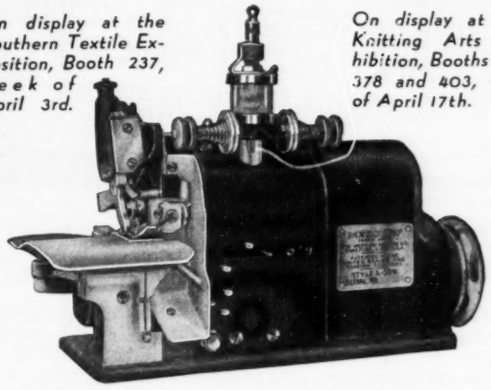

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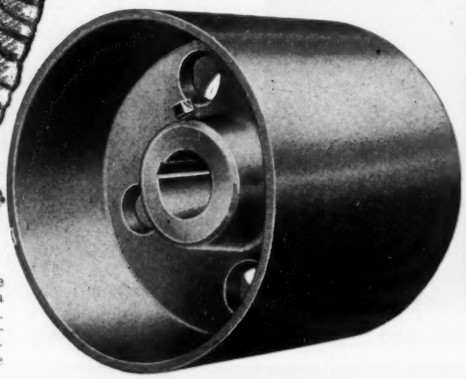
★ TEMPERATURE AND HUMIDITY CONTROL ★

GOLDENS' WEB CENTER Cast Iron Motor Pulleys



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GOLDENS' have furnished more complete and partial pulley and shafting equipment to cotton mills than any other manufacturer in the United States. Write today for prices.

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Cottonseed Oil Gum Waterproofers
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Paint and Protect With
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Quotations, Recommendations, Estimates, Gladly Furnished without obligation.

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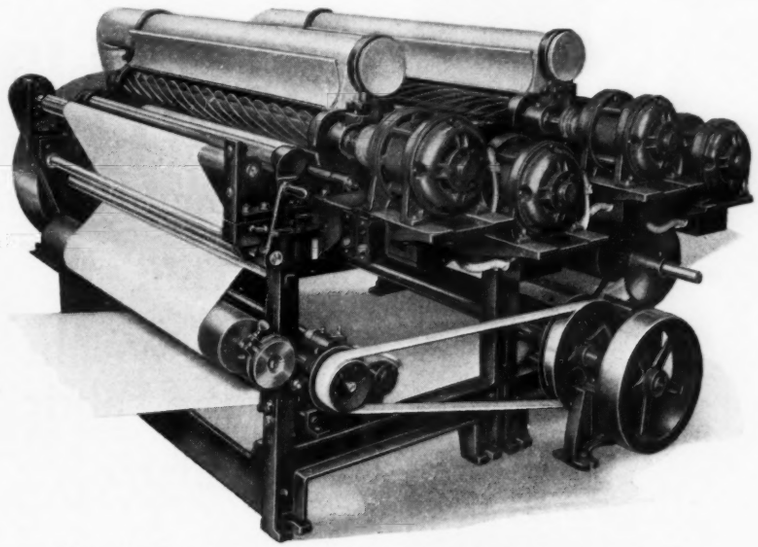

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ELEXTOP

MAKES THE

MOTORIZED REVOLVERS
COME TO A DEAD STOP
WHEN THE SEWINGS PASS

TAKES BUT A FEW SECONDS

HEAR
OUR
ATTRACTIVE
TRIAL OFFER

DIXIE AUTOMATIC COTTON SHEAR

WITH

DOUBLE ACTING SUCTION

A POWERFUL CLOTH CLEANER AND MONEY SAVER

PARKS & WOOLSON MACHINE CO.

SPRINGFIELD, VERMONT

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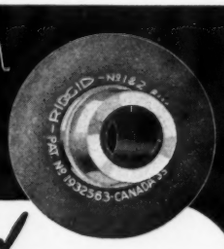

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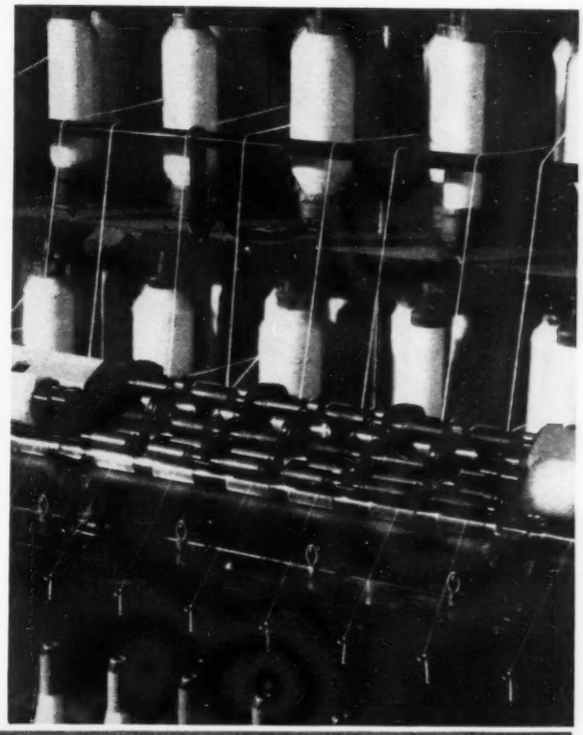

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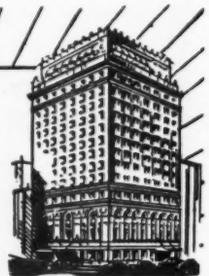

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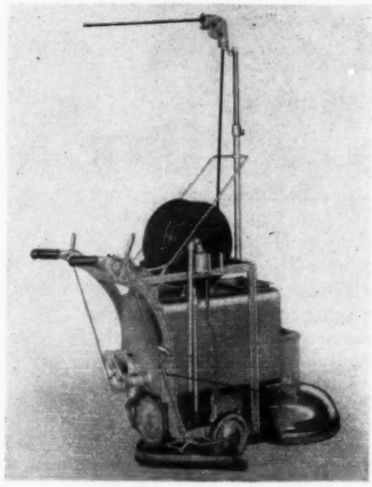

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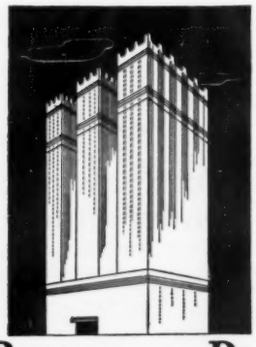

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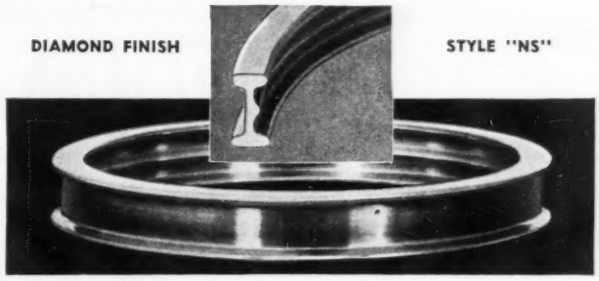

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FOR COTTON SPINNING
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FOR ASBESTOS YARNS

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"The New Flexible" "Needs No Damping"

Stocks in all the leading Mill Centres

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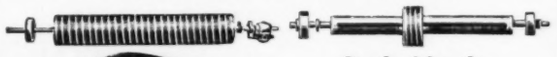
The Standard Card-Grinding Medium

GUARANTEED "A" QUALITY
THE ONLY QUALITY WE MAKE

Used the wide world over, like
The DRONSFIELD CARD-GRINDERS



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48 YEARS of Temperature and Humidity Control

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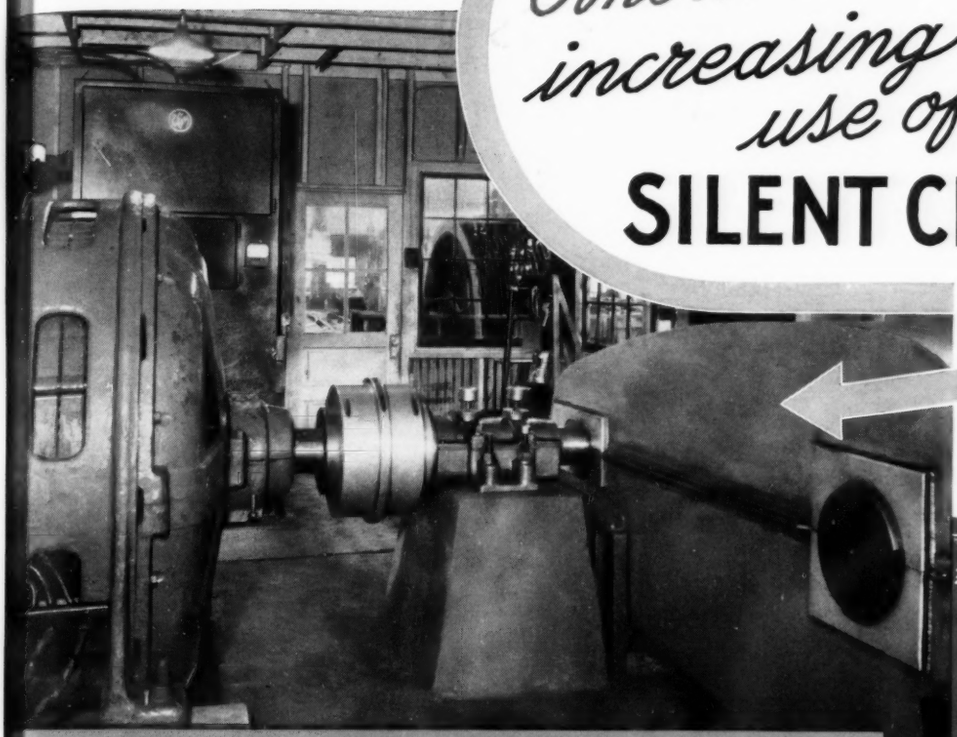
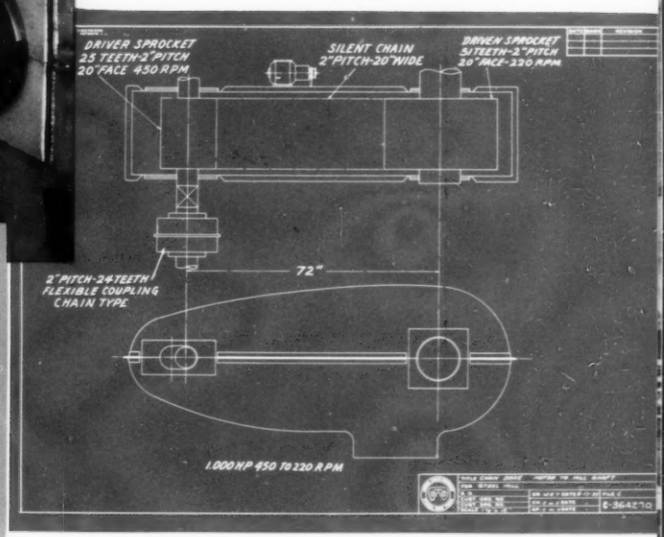
Another Example of the increasing use of MORSE SILENT CHAIN DRIVES

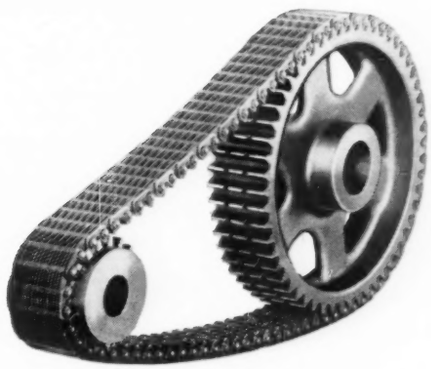




These important advantages are some of the reasons for the constantly increasing use of Morse Silent Chain drives . . .

1. LONG LIFE
2. COMPACTNESS
3. RUGGEDNESS
4. FLEXIBILITY
5. NO SLIPPING—"TEETH, NOT TENSION"
6. CAPACITY TO TAKE SEVERE OVERLOADS
7. HIGH EFFICIENCIES—UP TO 99.4% THROUGH WHOLE LIFE OF DRIVE
8. SAFETY PROTECTIVE HOUSINGS
9. MINIMUM MAINTENANCE
10. LOW FIRST COST

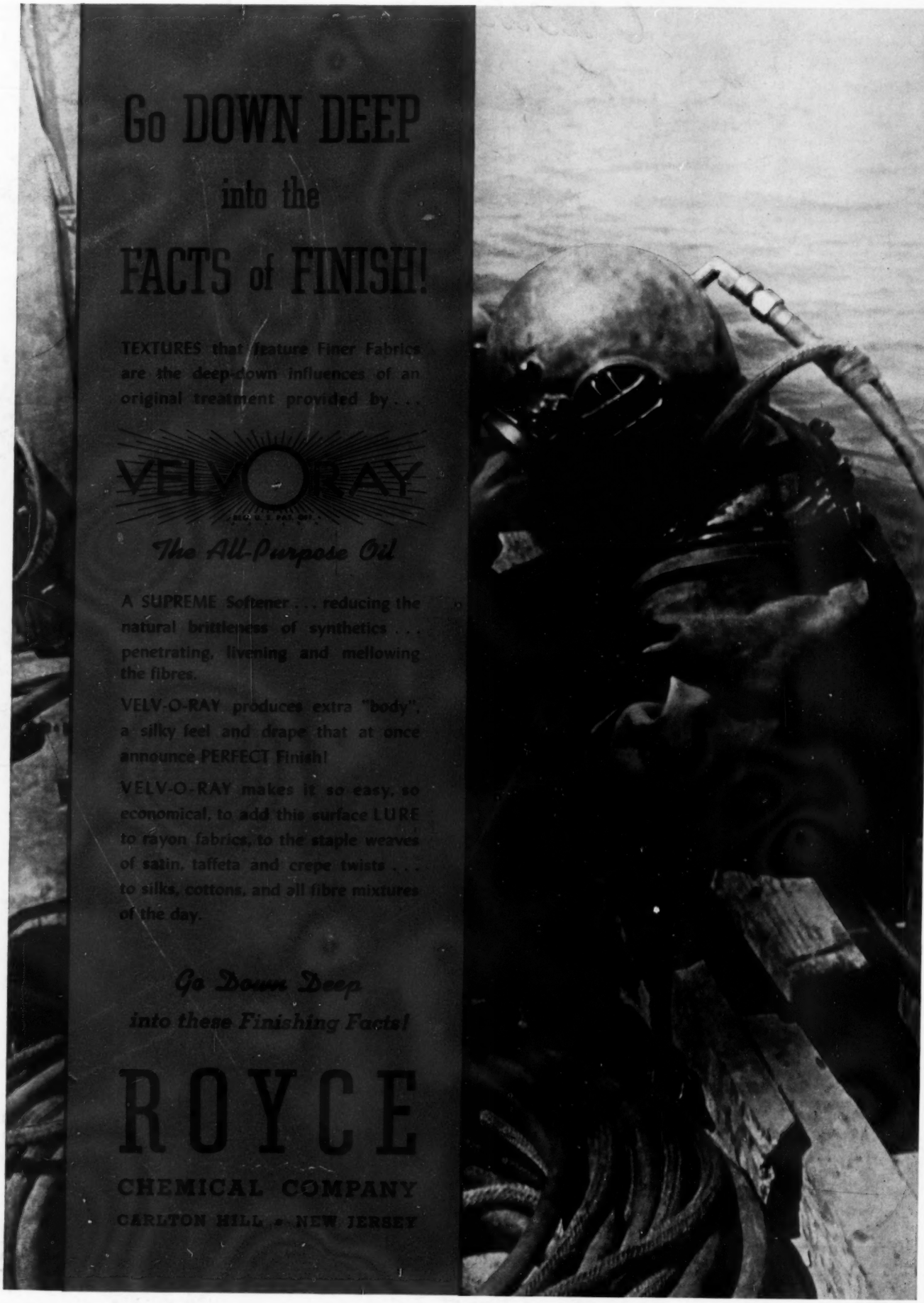
Morse Silent Chains are available in capacities from fractional horsepower to 5000 h. p. Ask the Morse man in your territory for full information, or write direct to Morse, Ithaca.



The installation shown in the photograph above left shows a Morse Silent Chain, 2″ pitch, 20″ wide, in its housing. This drive transmits 1000 h. p., with 100% peak overload, from motor to rolling mill. The blueprint drawing above shows details . . . Also shown in photo and blueprint is a Morse Flexible Chain Coupling, enclosed in split aluminum cover.

SILENT CHAINS ROLLER CHAINS FLEXIBLE COUPLINGS KELPO CLUTCHES

MORSE *positive* DRIVES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